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ABSTRACT

More than 2 million adults participate in programs provided by elementary and secondary schools, almost 8.5 million adults receive training from postsecondary schools, nearly 4.5 million participate in private employer-provided programs, and government agencies account for almost 4.5 million adult participants. Demographic data suggest that young, white, well-educated, higher-income, higher-occupational-status, employed adults have the highest participation rates. Reasons for nonparticipation are related to socioeconomic status, race, and prior educational attainments. Examination of training programs that have been successful in removing many of the barriers to participation in training, especially for adults in a career transition, indicate that successful programs are likely to involve collaboration or partnership among business, education, organized labor, and community agencies; offer flexible curricula and scheduling; offer supportive services; combine modes of instruction; offer remedial instruction; encourage peer support groups; gear programs to the wants and needs of those being served; and provide training for emerging, high-demand jobs or careers. A single, longitudinal database is needed to provide information on patterns, reasons for, and barriers to participation in education and training. Also needed are alternative methods of data collection to improve assessment of the sociopsychological, situational, and structural barriers to participation in adult education and a research agenda providing for hard evaluation of program outcomes. (MN)

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DIFFERENT STROKES FOR DIFFERENT FOLKS:
ACCESS AND BARRIERS TO ADULT EDUCATION AND TRAINING

IVAN CHARNER

AND

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1986

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Executive Summary

The central question examined in this paper is how well the education and training system is serving the needs of adults seeking further education and training for career transitions. After defining a set of critical terms, the paper analyzes access and barriers to education and training for adults in career transitions.

In Section I, a set of definitions that sets the parameters for this analysis of access and barriers is presented as follows:

- Adult education is a process whereby individuals, 17 years or older, who have resumed their education after a substantial interval undertake formal or organized instruction/activities with the intention of bringing about changes in information, knowledge, understanding, or skills.
- Adult training is a process whereby individuals, 16 years or older, who have resumed their training after a substantial interval undertake formal or organized instruction/activities with the intention of acquiring new information, knowledge, understanding, or skills related to the roles and routines of a job or work position.
- Formal or organized instruction/activity is a process in which the learner is supervised or directed in a structured activity over a specified time-frame. The supervision or direction may take the form of a teacher/trainer, a recording, a computer, a workbook, or a training guide.

In our analyses, the focus is on adult education and adult training, excluding all informal, nonorganized, unintentional, self-directed learning activities that adults may participate in.

In Section II, we outline the array of education and training opportunities for adults offered by 12 categories of providers, examining the numbers of participants served, the institutions serving them, and the types of education and training offered. The major findings in this section include:

- Over two million adults participate in programs provided by elementary and secondary schools.
- Postsecondary schools, including noncollegiate postsecondary schools, two-year colleges, and four-year colleges, account for almost 8.5 million adult participants. Two-year colleges are the most frequently cited course providers for participants in adult education.
- Almost four and one-half million adults participate in private employer provided programs.
- Government agencies (federal civilian, Postal Service, Armed Services, and state and local governments) account for almost four and one-half million adult participants.

- *Almost one and one-half million adults participate in programs offered by unions and professional associations.*

- *Over one million adults take private instruction.*

- *Community organizations (Y's, churches, scouts, etc.) provide education and training programs to 11 million adults.*

In Section III, patterns of participation in adult education and training are analyzed, including the demographics of adult participation, the reasons for participation, and the barriers to participation or reasons for nonparticipation. The major findings in this section include:

- *The demographic patterns suggest that young, white, well-educated, higher income, higher occupational status, employed adults have the highest rates of participation.*

- *Reasons for nonparticipation are related to socioeconomic status, race and prior educational attainments (particularly those reasons related to fears: motivation, costs, and information).*

- *Main reasons for participation are most often related to occupational mobility or personal/social development.*

- *Patterns of adult participation in education suggest that the education/training system is not adequately serving the career transition needs of those adults in most need.*

In Section IV, we examine five sample education and training programs that seek to overcome barriers and increase access for those adults in most need who wish to make job and career changes. Where possible, the effectiveness of these programs in overcoming barriers and in preparing adults for new jobs and careers is assessed, and different approaches are compared. Common program themes are identified, followed by an analysis of the critical program components that lead to program effectiveness in responding to the barriers faced by adults. The five programs reviewed in this section are:

1. *The Intensive In-Plant Technician Training Model, Rio Salado (AZ) Community College*
2. *The Grass Roots Computer Literacy for Rural Adults Project, University of Idaho*
3. *The Postsecondary Adult Literacy Education Project, West Virginia Institute of Technology*
4. *The Cascade Business Development Center, Portland (OR) Community College*
5. *The UAW-General Motors and UAW-Ford Joint Skill Development and Training Programs*

Based on our analyses, the critical elements that make for successful programs can be summarized as follows:

- Partnership or collaboration among business, education, organized labor, and/or community agencies
- Flexible curricula and scheduling
- Relevant and pragmatic courses
- Active participation by learners
- Availability of support services
- Workplace or community environment
- Combination of modes of instruction - classroom, hands-on, lecture, and discussion
- Low or no costs to participants
- Instructors sensitive to adult needs, styles, and values
- Availability of remedial programs
- Peer support groups encouraged
- Training for new, emerging, or high demand jobs or careers
- Programs geared to needs and wants of the population being served
- Increasing options and opportunities available to adults preparing for career transitions.

Section V summarizes the preceding sections and sets forth a set of recommendations relating to the need for a better and more comprehensive database on education and training for adults. These recommendations include:

1. The need for a single database which examines: patterns of participation in education and training; industry and union sponsored education and training; reasons for participation; and barriers to participation. The database should be composed of a large number of adults from all sectors of society. It should be longitudinal to determine: patterns of mobility; attitudinal and behavioral change; and patterns of education and training. The database could be developed by adding on to the tri-annual NCES study of participation in adult education.

2. Developing alternative methods of data collection, particularly with regard to measuring barriers. Measurement and data collection strategies are needed which better assess the social-psychological, situational, and structural barriers to adult participation in

education and training. A strategy which begins with intensive interviews that lead to the development of survey questions is recommended.

3. Developing an inventory of adult education and training programs. The inventory would provide detailed descriptions of programs including: goals, objectives, populations served, training offered, services provided, and pedagogical approaches. The inventory should be computerized to allow for easy access by policy makers and decision makers.

4. Preparation of detailed case studies of a large number of different education and training programs. These case studies would identify and document those components that respond to the needs or eliminate the barriers of different groups of adults. The case studies would uncover the critical elements related to access, barriers, and effectiveness of these programs. Decision makers in educational institutions, business, or government can use the information from these case studies for the development of new programs or the modification of existing programs to enable them to better meet the needs of adults for education and training.

5. The final recommendation focuses on the need for hard evaluation data on program outcomes. If possible, and the cost implications are recognized, all education and training programs for adults should be evaluated. At a minimum these evaluations should assess the short-range success of the programs in meeting their stated goals and objectives. In doing so information should be collected on the following: exit and new entry wages; placement; skill acquisition or competencies; occupational status, roles, and responsibility; support services; and modes of delivery. These evaluations would provide information on successful programs or program components that can be used in the development of new efforts to meet the needs of adults preparing for career transitions.

In recent years, adult participation in education and training programs has been increasing. At the same time, opportunities for education and training through traditional education instutitions, employer-provided programs, and other providers have become widespread. Education and training for adults can affect the personal and career development of adults and can affect the nature and quality of the workplace and the society. If new education and training programs are to prepare adults effectively for career transitions, they must become more responsive to the needs of those adults most impacted by lay-offs or displacements, or otherwise forced to change jobs or careers for mobility or self-improvement reasons. That is, education and training programs need to become more responsive to the "have nots," who would otherwise be unable to respond to the job and career changes that they will face.

For the educational system to be responsive to the needs of adults preparing for job or career transitions, it must look beyond its traditional role of education of youth towards its emerging role in adult education and training. It must be responsive to the diverse needs of a diverse society. The adult education and training system cannot work alone, it must work collaboratively with business, labor, government, and other educational organizations (all types at all levels). The adult education and training system cannot offer limited options; it must offer a comprehensive set of services to individuals and organizations. And adult education and training cannot be concerned just with education; it must be equally concerned with learning, learning that empowers individuals and organizations to respond to and act on the changes that they will be facing in the future. Education and training institutions must recognize that "different strokes for different folks" is the "new" rule under which they must operate if they are to serve the needs of adults seeking further education and training for career changes.

I. INTRODUCTION

Throughout the remainder of this century and into the start of the next, many adult workers will be displaced from their existing jobs. At the same time, others will be forced to change jobs or careers for mobility or financial reasons, and others will choose to make job and career changes to improve themselves and their lives for social or psychological reasons. For many, if not most, of these adults, additional education and training will be needed to provide them with the skills and knowledge necessary to make these transitions. At a very basic level, learning a job, advancing on a job, keeping pace with changing technologies, and preparing for a new job are all dependent on learning. Without opportunities for continued education and training, adults will be unable to respond to the job and career changes that they will face in the future.

The central question examined in this paper is how well the education and training system is serving the needs of adults seeking further education and training for career transitions. After defining a set of critical terms, the paper analyzes access and barriers to education and training for adults in career transitions.

In Section II, the structure of adult education and training opportunity will be described, examining the types and numbers of different institutions offering programs to adults; the education and training programs offered to adults; estimates of the numbers of adults in each category; and, wherever possible, the breakdowns of the population being served. Section III provides an analysis of the patterns of participation in adult education and training. This section details the demographics of adult participation, the reasons for participation, and the barriers to participation or reasons for nonparticipation.

In the fourth section, adult education and training programs are assessed. The central question examined here is how effective these programs are in preparing adults to respond to changes in the economy, their jobs/careers, and their lives. The final section explores policies and practices for adult education and training that are necessary for the education and training system to serve the needs of adults in career transitions.

Because we are concerned with formal instruction through adult education and training programs, it will be useful to develop a set of definitions that sets the parameters for this analysis of access and barriers. We use as a starting point Charner's (1980) definitions of adult education and adult training and include with them a definition of formal or organized instruction or activity.

- Adult education is a process whereby individuals, 17 years or older, who have resumed their education after a substantial interval undertake formal or organized instruction/activities with the intention of bringing about changes in information, knowledge, understanding, or skills.

One critical element of this definition is the resumption after a substantial time interval. The young adult who continues her or his education from high school to college to graduate school without any long interruption would not be considered an adult education participant. The high school graduate, however, who enters a part-time Associate degree program in a community college after four years of full-time employment would be considered an adult education participant. The time frame, therefore, between early and subsequent educational activities is one element that differentiates adult education from education in general.

A second critical element is the intention of bringing about changes in information, knowledge, understanding, or skills. The idea that the learning is deliberate and planned is central. Participants in formal or organized instruction seek to learn something and as a result bring about some form of change. Any organized or formal instruction/activity that adults participate in (resumed after a substantial time interval) would therefore be considered adult education.

- Adult training is a process whereby individuals, 17 or older, who have resumed their training after a substantial interval undertake formal or organized instruction/activities with the intention of acquiring new information, knowledge, understanding, or skills related to the roles and routines of a job or work position.

Adult training is differentiated from adult education only in terms of the intended outcome of the formal or organized instruction. The change that is being sought is related to the acquisition of information, knowledge, understanding, or skill for roles and routines of a job or work position. The critical element is the relation of the deliberate or organized learning to a job or work position. An individual who participates in a course or program to learn English or for personal enrichment would not be considered to be participating in adult training, while a participant in a job skills or job retraining course or program would be considered to be participating in adult training. The objective of the instruction, activity or deliberate learning is what differentiates between adult education and adult training.

- Formal or organized instruction/activity is a process in which the learner is supervised or directed in a structured activity over a specified time-frame. The supervision or direction may take the form of a teacher/trainer, a recording, a computer, a workbook, or a training guide.

A number of elements are critical to this definition. First, the instruction is supervised or directed. A student-teacher, or student-curriculum (as in correspondence schools or computer-assisted instruction) relationship is involved. Second, the activity is structured. A specific curriculum or course content is clear, as are the expectations of the learner. Finally, the activity has a specified time-frame. The activity has a clear beginning and end that are recognized by the adult participant. These elements of formal or organized learning may be met through workshops, seminars, correspondence, or computers but would not include self-directed learning whereby a person sets out on a pursuit of information, knowledge, understanding, or skills without supervision or direction.

In the analyses that follow, the focus is on adult education and adult training, excluding all informal, nonorganized, unintentional, self-directed learning activities that adults may participate in.

II. THE STRUCTURE OF ADULT EDUCATION AND TRAINING

In this section, our aim is to put together an up-to-date mosaic of the current education and training opportunity structure, based on the best available estimates as to how many adults, particularly workers and would-be workers, are taking advantage of the existing opportunity structure in the United States.

Estimates of the number of adults engaged in learning and training activities in the United States range from a conservative 13 percent of the adult population (NCES, 1982) to a high of 98 percent, when self-planned/self-directed learning is included (Tough, 1971). This range of estimates may seem enormous at first glance, but upon closer scrutiny we discover that the discrepancies are attributable to significant differences in the way "learning" is defined, with "organized instruction administered by a teacher" at one end of the scale and "deliberate efforts to learn" at the other. The discrepancy is also due in some part to variations in the methodological approaches employed by researchers.

The National Center for Education Statistics, in its May 1981 survey of participation in adult education, reported that more than 21 million adults participated in adult education in 1981. In this survey, adult education consisted of "all courses and organized educational activities taken part-time" by persons 17 years of age and older (NCES, 1982). The majority (20 million) of the adult education participants were either "part-time students in an elementary or secondary school, college, or vocational school, as well as those who took a course but were not otherwise classified as students." Slightly over one million adult education participants were full-time students who took an adult education course in addition to their regular schooling.

At the other end of the estimate range, the definition of learning activities is expanded to include self-planned/self-directed learning, frequently undertaken by an individual to satisfy a particular curiosity or to fill a specific need for information, e.g., studying the language and customs of a foreign country prior to a vacation. Estimates of adult participants in such learning run as high as 79 to 98 percent of the adult population (Tough, 1971; Penland, 1977).

For the purposes of this paper, however, we will address ourselves only to the somewhat more quantifiable area of adults engaged in education and training activities in both school and non-school organizations.

A. Background

The policy of providing education, training, and learning opportunities for adults is by no means a recent innovation in this country. General extension courses have been offered in the U.S. since President Van Hise of the University of Wisconsin stated in 1906 that "the boundaries of the campus must be coterminous with the boundaries of the State" (Ziegler, 1979). The process of citizenship education for new immigrants, the popularity of night schools among those who wanted a high school diploma but had to work during the day in order to make a living, and the venerable cooperative extension service available to those trying to live off the land all attest to the value working Americans have placed on continuing their learning beyond the traditional formal limits, as does local, state, and federal government assumption of responsibility for providing learning opportunities for adults. What seems to be a recent development, however, is the growing sentiment that access to futher education and training is no longer simply a privilege of the already privileged among us (in terms of levels of education and income) but is a need--some would even say a "right"—of all American workers and would-be workers desiring such opportunity, particularly those facing the prospect of unemployment unless they are able to acquire new skills or knowledge.

One indicator of the growing interest in adult learning can be found in the increasing number of adults who are participating in education, according to information provided to the National Center for Education Statistics by the Bureau of the Census as part of its Current Population Surveys between 1969 and 1981. In 1957, a little over eight million people reported that they had taken part in some form of adult educational activity, representing 7.6 percent of the total eligible adult population.[1] In 1969, that figure increased to slightly more than thirteen million participants or 10 percent of the population. Data for 1972 indicated that over fifteen and a half million people, or 11.3 percent of the population, had been engaged in a structured learning activity, while the latest figures available (1981) show that more than 21 million people, representing 13 percent of the total adult population, participated in part-time organized learning. Clearly, more and more adults are taking advantage of the existing opportunity structure to obtain new knowledge and skills, as well as locating learning resources in a variety of institutions and organizations.

B. Sources of Education and Training Opportunity in the United States

The range of education and training opportunities currently available to American adults is considerable and is offered by a wide variety of institutional providers. In this paper, we are particularly interested in identifying the numbers served by and the sources of adult education and training in schools and in non-school organizations, which are categorized in this paper as follows:

1. elementary and secondary schools;
2. postsecondary schools, including: (a) noncollegiate postsecondary schools; (b) two-year colleges and vocational/technical institutes; and (c) four-year colleges and universities (including extension and

continuing education programs);

3. private employers (business and industry);

4. government agencies, including: (a) government employees—civilian, military, and state and local government; (b) federal employment and training programs, including CETA, WIN, and the Trade Act of 1974; (c) veterans education; (d) agriculture cooperative extension service; and (e) other federal training;

5. professional associations;

6. labor unions, including: apprenticeships, union education courses, labor studies, and negotiated tuition-aid programs;

7. community organizations;

8. free universities;

9. correspondence instruction;

10. private instruction;

11. other providers; and

12. home computers.

Table A offers an overview of the numbers of participants in each of the above categories. A closer look at each of these education and training providers and the number of users in each category will give some idea of where the majority of adult learners are clustered and what institutions are currently responding to this growing population.

TABLE A
Participants in Adult Education and Training by Provider and Date of Data Collection*

Provider	Number of Participants	Year Data Collected
Elementary & Secondary Education	2,018,906	1980
Postsecondary Schools	8,334,000	
Noncollegiate Postsecondary Schools	1,555,000	1981
Two Year Colleges	3,383,000	1978
Four Year Colleges	3,356,000	1978
Private Employers	4,400,000	1977
Government Agencies		
Federal Civilian Employees	515,000	1979
United States Postal Service	723,000	1980
Armed Forces	2,165,000	1978
State and Local Governments	1,200,000	1979
Federal Employment and Training Programs:		
CETA	2,900,000	FY 1981
WIN	276,000	FY 1981
Trade Act of 1974	48,155 (total)	1975-82
Veterans Education	1,234,000	FY 1980
Cooperative Extension Service		
Professional Associations and Unions	790,000 +600,000	1978 1983
Community Organizations	11,000,000	1972
Correspondence Schools	499,000	1978
Private Instruction	1,159,000	1978
Other Providers	1,779,000	1978

* Numbers are based on the best, most recent available data.

1. Adult Education in Elementary and Secondary Schools

Adult education programs can be found in most school districts throughout the United States. These programs are aimed primarily at those adults who did not complete elementary or secondary school and who wish to earn a high school diploma. Three-quarters of the participants in these programs are 22 years old or older (Delker, 1984). Usually the course of study consists of preparing students to take and pass the General Education Development (GED) tests. In 1982, 682,000 persons took the GED exams, and 492,000 of them passed. Sixty-four percent of those who took the tests were 20 or older. Almost 50 percent of the candidates indicated that they were taking the exams in order to gain entrance to additional education or training programs (NCES, 1984).

Adult Basic Education (ABE) courses, which support achievement of functional literacy, with primary focus on those with less than a fourth grade education, serve about one-third of adult education participants in elementary and secondary education. These courses are aimed at eliminating illiteracy and are funded, through the states, by the federal government in the amount of $100 million in FY 1984 (down from $155 million in FY 1980), under the Adult Education Act, PL 91-230, as amended. Sec. 302 of the legislation directs that ABE afford every adult the opportunity to acquire the basic skills needed to function in society, including work skills, and to earn the equivalent of a high school education (Delker, 1984).

Other adult education school programs offer "English-as-a-Second-Language" courses for non-English-speaking immigrants as well as a variety of occupational/skill courses, most of which are non-credit-bearing. The majority of these programs are supported by funds from local and state revenues ($63 million in 1981), in addition to the federal ABE allocations. Most of these offerings are available at no or low cost to the participant, who typically attends the course at night in a community-based facility such as a community center or an adult learning center, while adult participants in secondary education programs usually attend courses located in secondary schools. In 1980, 2,018,906 adults were enrolled in adult basic education, adult secondary education, and English as a Second Language programs. Enrollment quadrupled between 1970 and 1980 (NCES, 1984).

Elementary and secondary schools have also become an education and training resource for the community at large, meeting the educational needs of many adults who have gone through high school, and even college, who attend classes offered in a variety of occupational and avocational subjects. Of the 2.7 million courses in elementary and secondary schools reported in the 1978 NCES survey of adult education, 17 percent were in engineering and related technologies, and between 10 and 14 percent in each of the following: business subjects; language and literature; arts; home economics; and physical education and leisure subjects. Only six percent of the total number of courses were in adult basic education and high-school equivalency (Goldstein, 1984).

The educational and economic benefits of these programs for the participants are significant. According to the 1979 edition of The Condition of Education, "Through adult basic and secondary education programs, (in FY 1976) 118,071 participants received an eighth grade diploma, 128,886 entered high school, and 114,222 enrolled in other education." In addition, 18,983 persons were removed from public assistance, 61,610 found jobs, and 44,502 found better employment. This record is particularly impressive in view of the fact that while the number of participants in adult elementary and secondary education may be small, it represents many of those adults who are most in need of educational assistance in order to obtain the minimal credentials necessary for entering or reentering the labor market. It is true, however, that these participants represent a tiny fraction of the estimated 23 million functionally illiterate Americans currently being targeted under the recently established Adult Literacy Initiative. Those adults who already have the high school diploma or equivalent would be more likely to turn elsewhere in their search for further education and training opportunities.

2. Postsecondary Schools

Information on the number of individuals enrolled in education and training programs at postsecondary institutions is difficult to ascertain, due primarily to the varying and frequently overlapping definitions employed by different surveys. In its 1978 survey, for example, the NCES breakdown of adult participation, based on what institution sponsored the learning activity, was as follows:

Institutional Sponsor	Number of Participants
Noncollegiate postsecondary school	1,555,000
Two-year community college, junior college, or technical-vocational institute	3,383,000
Four-year college or university	3,356,000

Unfortunately, in its 1981 survey, NCES reported only the number of courses taken by participants in adult education provided by the institutions in each of the three categories (not the numbers of participants), as follows:

Provider of Instruction	Number of Courses
Noncollegiate postsecondary school	3,413,000
Two-year community or junior college or technical institute	7,030,000
Four-year college or university	7,160,000

As we are most interested in the numbers of participants, rather than courses, this section will rely on the 1978 survey data, unless otherwise noted.

A. Noncollegiate postsecondary schools. This category includes vocational, trade, business, hospital, and flight schools which are generally nondegree-granting institutions, offering certificates upon completion, that do not require a high school diploma for entry. Of the 1,595,000 adult education participants enrolled in these noncollegiate postsecondary schools in 1978, 767,000 reported attending public schools, while 631,000 were enrolled in private schools. According to a 1981 NCES survey of enrollments in noncollegiate postsecondary schools, however, out of a total enrollment of 1,555,000 students, 1,109,000 participants were enrolled in private institutions while only 446,000 were enrolled in public schools (U.S. Bureau of the Census, 1983). The two sets of data are not comparable, unfortunately, due to the fact that the first survey was conducted of individuals while the second study involved institutional responses.

And according to yet another report, there were a total of 3,066,000 students enrolled in noncollegiate postsecondary schools in October 1976. Some of the more detailed findings of this study revealed that over 60 percent of the women and more than 80 percent of the men enrolled were employed full-time. In addition, 55 percent of all the employed enrollees were working full-time and attending school full-time (NCES, 1978).

These schools, public and private, draw from two major groups: recent high school graduates interested in obtaining vocational skills and adults looking to update/improve existing skills or learn new ones. Students also include participants in federal employment and training programs. These schools do not grant degrees, offering primarily vocational courses, part-time and full-time, although some students take them for avocational purposes.

The 812 public schools in this group are primarily vocational and technical schools offering a wide variety of occupational programs. There are also courses given by hospitals and other health institutions, and a small number of trade schools. The private schools, numbering 6,800 in 1978, tend to specialize in a single subject, such as flight training, business and office courses, cosmetology, or other specific trades (Goldstein, 1984).

Noncollegiate postsecondary schools maintain a high degree of flexibility and responsiveness to community needs. They tend to have shorter courses and try to maintain close contact with employers to ensure that their curricula are adapted to labor market needs. They are also far less rigid than other postsecondary institutions in regard to teaching credentials, placing a higher premium on practical experience than on academic qualifications.

The educational impact of these schools is somewhat understated by the enrollment statistics, since the courses are shorter and more concentrated, especially in the private schools. The output of graduates is higher, relative to the number of students enrolled at any time in the course of a year, than it is in two-year or four-year colleges.

In regard to the effectiveness of both the private and public schools in serving the career needs of their students, evidence to date is mixed, at best. In 1974, Wilms conducted a study of 21 public and 29 private proprietary schools in four large metropolitan areas. The sample included: 1,176 students just entering one of six selected occupational programs; 1,370 near-graduates; and 2,270 graduates who had been out of school up to one year or from three to four years. He found that only two out of ten graduates from both public and proprietary schools who chose professional or technical-level training ever got the jobs they were preparing for. Eight out of ten graduates from lower-level clerical or service worker programs got jobs in their fields but, except for secretaries, barely earned the federal minimum wage. Wilms also found that public and private school graduates had about the same occupational success or, more accurately, lack of it. He concluded that "postsecondary occupational education, both public and private, maintains class and income inequalities rather than overcomes them" (Wilms, 1974).

A study conducted by the American Institutes for Research in 1972, however, found that both public and private postsecondary occupational institutions were "generally effective in producing graduates with marketable skills" and that "post-training salaries were high enough to indicate that training was cost effective" except for private computer training programs (Jung et al., 1976). The AIR study surveyed 4,194 private school and 1,502 public school graduates in four large metropolitan areas. Over 75 percent of these graduates reported looking for training-related jobs after terminating their schooling, while just under 60 percent of all graduates (public and private) actually found jobs in their field, and an additional five percent remained in related jobs they had held before training began. When employed graduates (85 percent of the sample) were asked whether they thought their training was definitely worth the money they spent on it, 60 percent of the graduates from public schools said yes, while only 33 percent of the private school graduates agreed. (This finding may be due to the fact that a much higher proportion of private school graduates were in the computer area and were not as successful as graduates in other occupational areas in finding jobs in their field.)

The AIR study urged that information on each and every vocational school regarding evidence of performance of graduates, selection and dropout rates, costs, and ethical violations should be collected and disseminated through a regular information system that is continually updated (Jung et al., 1976). This is a particularly important recommendation in view of the fact that, according to at least one source, the noncollegiate schools, both public and private, will expand in the 1980's with the emergence of new occupational fields which require extensive education and training, such as data processing, administration, and human services, with substantial growth in the areas of allied health fields, office occupations, cosmetology, and barbering (Koester, 1979).

B. Two-year colleges and vocational/technical institutes. In 1978, approximately 3,383,000 participants in adult education were enrolled in two-year postsecondary institutions. These schools, numbering 1,296 in 1982-83, generally fall into one of four categories, representing various institutional arrangements and educational philosophies: (1) the junior college - a two-year institution offering a program acceptable toward the B.A. degree as well as a liberal arts program for those not interested in pursuing a B.A., and occupational/career training in specific job areas; (2) the branch campus - a two-year institution offering a program acceptable toward the B.A. and directly affiliated with a state university; (3) the technical institute - a two-year institution requiring a high school diploma or equivalency for admission and emphasizing occupational programs; and (4) the vocational-technical center - a school which offers occupational programs almost exclusively and does not require a high school diploma for entrance.

The percent of participants in adult education enrolled in these institutions has increased substantially, from 11.9 percent in 1969 to 19 percent in 1978, when two-year colleges became the course providers most frequently cited by adult education participants. Community and junior colleges offer courses in career retraining and updating, for those currently employed as well as those seeking to enter or re-enter the labor market. Because the majority of the two-year schools are publicly supported, tuition and fees are generally low and affordable. Average tuition costs in 1980-81 were $385 for public two-year colleges, compared to $593 for public noncollegiate postsecondary schools and $915 for public four-year universities (U.S. Bureau of Census, 1983 and NCES, 1984). Also because of their liberal admissions policies, two-year colleges may be particularly attractive to those would-be adult learners who have not fared well within the traditional formal education system. These factors help explain the phenomenal growth which occurred between 1967 and 1977, when the public two-year institutions nearly doubled their share of total enrollments in institutions of higher education, totaling 3,913,000 students in 1977, or 34.3 percent of all the students enrolled in institutions of higher education in the United States (NCES, 1979).

The continuum of educational philosophies represented by these schools ranges from immediate job preparation, stressed most by the vocational-technical centers, through dual purpose institutions represented by the junior colleges and technical institutes, to concentration on preparing students for transfer to a four-year school by the branch campuses. Currently, enrollments in occupational programs surpass those in transfer programs (Gleazer, 1979).

Recent data reveal that the two-year postsecondary school population is a working population (in 1978, more than half the adult education participants were employees full-time), with particular interest in the occupational pay-off of the programs they are enrolled in. The data also show that the two-year colleges are serving an extremely varied clientele consisting of adults (the average age of community college students is twenty-seven), women, minorities, and the "disadvantaged," as well as substantial numbers of conventional postsecondary students (Fraser, 1980).

These schools have been particularly responsive to the learning and training needs of adult workers in their communities, particularly blue-collar workers. A 1977 study indicated that 41 percent of community colleges had developed programs in response to union requests. Twenty-five percent were offering classes off-site in workplaces, union halls, and community centers. Programs included skill-upgrading in such areas as electronics, welding, and secretarial work. The main unions involved were the electrical workers, machinists, carpenters, plumbers, and sheet-metal workers (Goldstein, 1984). This responsiveness on the part of community colleges likely accounts for the finding that a higher percentage of blue-collar and service workers enrolled in adult education were in two-year colleges than in any other type of institution (NCES, 1979a).

Community and junior colleges also work effectively with local business and industry. Current federal policies have made such relationships - or "partnerships" as they are popularly termed - even more important, given the need for state and local agencies and organizations to draw on their own resources to replace reduced federal support, particularly in the area of workforce improvement.

Partnerships between colleges and businesses take a variety of forms, including, most often: plant-specific training provided by the college under contract with a local employer; equipment use or donation; industry assistance in developing programs; faculty assignments in industry; industry personnel as part of the instructional staff; sharing of facilities; and on-the-job training. The benefits of such cooperative arrangements for colleges can be numerous- 1) opportunity to meet their community responsibility, 2) enhancement of program offerings, 3) establishment of cooperative, long-term relationships with industry, and 4) increased revenues. Such partnerships, however, may create certain dangers for colleges: the possibility that the school might lose sight of its broader educational mission; the chance that other important program commitments could be diminished; the potential of losing faculty to industry; possible over-reliance on these mainly short-term programs to support the college; the chance that industry's specific training demands may threaten the school's responsibility for providing programs with the same standards as its on-campus offerings; and the danger that focusing on job-specific training may limit the general employability of workers and reduce the adaptability of the workforce.

A 1980 publication listed over 200 cooperative linkage projects between community colleges and local businesses (Bulpitt and Lohff, 1980), and the numbers have increased over the last four years. Since then at least six more publications have been disseminated that detail almost 600 college/business partnerships (see AACJC, 1984 for a complete listing of these books).

In summary, the figures indicate that two-year colleges will continue to attract large numbers of adult participants, and that relationships between colleges and businesses and between colleges and unions will increase, due to the following reasons:

- Two-year colleges offer low-cost, quality training.
- They provide adaptable and flexible programs, both in terms of location as well as willingness to adapt and alter programs to meet specific user needs.
- They are capable of presenting a range of programs, from developmental learning activities to technician programs and from entry-level to retraining.
- They adjust scheduling to meet learner demands (Jackman and Mahoney, 1982).

C. Four-year colleges and universities. According to the 1978 NCES adult education survey, over 18 percent of adults participating in adult education (or 3,356,000 individuals) were enrolled in four-year colleges or universities. This percentage has been declining, due perhaps to the increasing number of two-year colleges and community organizations offering adult-oriented courses.

Colleges and universities have long been involved in the further education of adults through their continuing education and extension departments. Approximately 1,230 four-year institutions of higher education operate such programs or variations thereof (U.S. DHEW, 1977). In general, the range of courses is broad and varied, although usually not for degree credit. The participants in these programs are usually well-educated and fairly well-off, while the programs are generally supported almost entirely from student fees. It is interesting to note that the number of four-year institutions with extension/continuing education programs more than doubled between 1967 and 1977, while the number of non-credit participants, on a national basis, declined slightly during the same period (Peterson and Associates, 1979). This increase in extension/continuing education programs may reflect recent moves on the part of four-year institutions to attract a new clientele to offset declining enrollments at the undergraduate level, but the lower number of participants may reflect the competition with two-year colleges and community organizations that have been aggressively pursuing an adult clientele while four-year institutions have been slow to make changes in several areas of significance to adult learners. These include the need to make changes in their operating procedures to allow greater flexibility in course scheduling, admissions, and administration and changes in their instruction to give greater attention to the pedagogical needs of adults (AAHE, 1981).

Colleges and universities are providing more learning opportunities for adults through two separate approaches: adapting the delivery of traditional programs to accommodate a non-traditional student population and offering non-traditional programs to both traditional and non-traditional students. Some of the modifications being made to the traditional course offerings include:

1. Scheduling classes at times other than during the morning or afternoon, when the majority of adults are at work. More classes are now being held at night or even on weekends. For example: Wayne State University's Weekend College, a prototype for other four-year universities through the To Educate the People Consortium.

2. Offering classes at locations other than just the main campus. Courses are being given at regional campus centers as well as libraries, employment sites, union halls, and even on commuter trains. For example: the College of New Rochelle; the University of Pennsylvania/CIGNA B.A. program.

3. Using the media to transmit courses, lectures, and reading materials. A number of courses are being given through local newspapers; others are televised and are shown, through the use of cable TV, several times during the week. Another use of television involves taping lectures so that students may come in and view the tapes at times convenient to their schedules. For example: New York University's Sunrise Semester; PBS's Adult Learning Programming Service; California State University at Chico's Instructional Television for Students aimed at rural, part-time off-campus students.

4. Easing admission requirements and formal entry qualifications for certain courses of study, including the granting of credit for life experience. For example: the College Level Examination Program; the Council for Advancement of Experiential Learning: and the New York State Regents External Degree.

5. Encouraging greater use of independent study,which may be more challenging and appropriate to the needs of adult learners. For example: Empire State College; University of Mid-America.

Over the last decade there has been marked growth in the development of non-traditional programs in colleges and universities. These programs have been founded on two basic principles: "that opportunity should be equal for all who wish to learn and that learning is a lifelong process unconfined to one's youth or to campus classrooms" (Cross et al., 1974).

Non-traditional learning programs in four-year postsecondary institutions include a broad spectrum of options for adult learners, such as:

Independent study (full-time/part-time)
Three-year B.A. degree
Individual learning contracts
External degrees
Internships/work-study programs
Correspondence or home study courses
Tutorial study courses

Televised instruction
Computer-assisted instruction
Cassette-based courses

In addition, credit may be granted for such diverse experiences as:

Learning in proprietary schools
Learning in industrial/in-service training programs
Study abroad
Learning in community-based groups
Volunteer work
Employment experience
Artistic achievement
Military service
Learning in the military

Other services which may be offered to adult learners include: special counseling for adults; child care services; credit by examination without course enrollment requirements; and admission for adults over the age of 25 without a high school diploma or equivalency certificate.

About 9.5 million courses were taken by 5.6 million adult students in four-year colleges and universities in 1978. Nearly half of the courses were taken for credit towards degrees. Most of the participants in adult education in four-year colleges and universities studied part-time or in short courses. Two-thirds of all the participants worked full-time. Half were professional and technical workers and one-quarter were managerial workers (NCES, 1978).

In addition to degree courses taken by participants in adult education, one-sixth of the courses taken were to earn continuing education credits for licensure renewals or to obtain licenses or certificates, and one-third were taken for general educational or avocational purposes (NCES, 1978).

In summary, then, at the postsecondary level, both collegiate and noncollegiate education institutions seem to be moving towards greater flexibility in accommodating diverse new populations of would-be learners. Practices vary significantly, however, as does the level of institutional responsiveness to the special needs of adult workers in search of learning opportunities within the postsecondary structure. Thus far, it appears that the innovative approaches cited above represent, in most instances, isolated departures from traditional delivery systems geared towards traditional student populations. With the decline in enrollment of traditional students, more postsecondary education institutions will find themselves in the challenging position of having to attract an older clientele and adapt to the differing needs and expectations of this nontraditional population.

3. Private Employers (Business and Industry)

Business and industry provide training to meet several varying objectives: adapting the general skills already possessed by employees to the specific work needs of the company; upgrading employee skills and retraining for promotion or adaptation to a new technology or changed work environment; providing continuing education in professions with formal requirements; and safety training.

Attempts to determine the extent of education and training in business and industry have resulted in a variety of contradictory information, findings, and estimates. The one common area of agreement among all the studies is the conclusion that much more formal (and informal) education and training take place in the private sector than have been acknowledged and that far more funds are being expended than has been recognized or recorded. Estimates of annual employer expenditures for employee education and training range from a low of $2 billion (Lusterman, 1977) to a high of $100 billion (Gilbert, 1976). The American Society for Training and Development (ASTD) estimates an annual employer expenditure of $30 billion which includes expenditures for: in-house education and training; research, design, planning, administration, and evaluation of the training function; tuition-aid for employees; seminars and workshops; consultant services; correspondence and other self-study courses; and the indirect cost of overhead allocation. The ASTD figure does not include the costs of wages and salaries of those being trained (Craig and Evers, 1981). The lack of a coordinated information recording or reporting system, together with the reluctance of private industry to release such information to those outside the corporate structure, results in a great lack of knowledge regarding the extent of education and training opportunities within the private sector.

In 1977, Lusterman reported on survey responses received from 22 percent of all firms with 500 or more employees engaged in training and education activities for the period 1974-75. The formal training modes were identified as: (1) company courses, conducted by company staff or outside resources, held on or off company premises, during or after work hours; (2) tuition-aid programs, independently pursued by employees who receive full/partial reimbursement from the company, usually attended at local institutions of higher education after working hours; and (3) other outside courses, usually offered by professional or trade organizations or corporate trainers, taken during work hours.

The survey indicated that 89 percent of the responding firms provided tuition-aid for after-hours courses;[2] 74 percent offered other outside courses during work hours; 70 percent provided for company courses during work hours; 39 percent offered company courses after hours. The survey, however, was not very clear regarding the numbers of employees receiving training and the kind of training they received, although it has been estimated that about 6.3 million employees, or 20 percent of all workers in firms of 500 or more workers, participated in some training activity (Goldstein, 1980).

As measured by distribution of expenditures and number of employees participating, the most frequent type of training provided by firms with 500 or more workers was company courses during work hours. These courses (and the percent of total employees enrolled in them) broke down as follows:

Management development/supervisory	37%
Functional-technical (including production maintenance, marketing, sales, administration, finance, personnel, etc.)	61%
Basic remedial	10%
Other	10%

Although tuition-aid programs were reported as being offered by 89 percent of the responding companies, only 2 percent of all employees participated in after-hours training and education, of which tuition-aid is one program. Approximately half of the companies paid all the costs of tuition, while the rest paid either 50 or 70 percent. The smaller firms in the survey favored tuition-aid and other outside courses, lacking the numbers or resources to provide in-house training themselves. Recent legislative actions, however, threaten the viability of tuition-aid programs. In July 1984, President Reagan signed into law the Deficit Reduction Act of 1984, which includes a provision requiring workers to pay taxes on educational benefits that they receive from their employers, unless they are taking courses that are strictly job related. Since 1978, employees have not had to pay taxes on their tuition benefits, regardless of the nature of the courses. That provision expired at the end of 1983 and Congress failed to renew it.

According to the American Society for Training and Development, this development will affect lower-level employees particularly adversely, inhibiting upward mobility by entry level as well as blue and white collar non-supervisory employees and discouraging job retraining for dislocated workers (ASTD, 1984).

In 1974-75, business and industry paid for the training of approximately eight million workers, three-quarters of whom were trained by the companies themselves while the remainder were provided with full or partial tuition-aid (Goldstein, 1984). We may be quite certain that the NCES 1978 figure of 2,492,000 adult education participants in courses provided by business or industry is much lower than the total number of participants in industry-funded education and training.

In summary:

> ... a hazy picture emerges: formal training is provided by a good deal less than half of all firms, but by more than 8 out of 10 larger firms; and the number of workers involved in training in any one year amounts to about one in five in large firms, and a smaller proportion of all industry. Training is mostly given in company-sponsored courses during working hours. Training for skill development (as distinct from orientation, the firm's organization, safety, etc.) is only a part of the total. Much of the formal skill training is for management or other white collar skills; manual workers get a disproportionately small share of formal training (Goldstein, 1980).

4. Government Agencies

A. Government Employees. As of October 1983, there were just over 19 million employees in the public sector at the federal, state, and local levels (New York Times, August 12, 1984). This workforce is composed of all civilian federal employees (numbering nearly three million), uniformed members of the four military branches and the Coast Guard (two million), state government employees (five million), and local government employees (nine million). The number of these employees who receive government funded and/or provided education and training annually is estimated at more than four and a half million persons, broken down as follows:

Government Agency	Number of Participants
Federal Civilian Employees	515,000
United States Postal Service	723,000

Armed Forces:

Military Training	1,590,000
Voluntary Education Program	575,000
State and Local Governments	1,200,000
TOTAL	4,603,000

FEDERAL CIVILIAN EMPLOYEES: For federal civilian employees, the objective of the learning experience, from the government's point of view, is to increase efficiency and effectiveness of operations by enhancing the skill, knowledge, and capabilities of employees in the performance of their jobs. According to 1978 data, over 99 percent of the education and training activities engaged in by federal civilian employees were of short duration, averaging 41 hours; 74 percent were performed in-house; and 77 percent of those opportunities provided outside the government were standard academic courses. Nearly 70 percent of the in-house programs were aimed at improving the employees' performance of their present jobs. In addition, there was training for new work assignments, to develop needed skills, or to prepare workers for new technology. Most of the training was in the subject matter of the employees' work, technical or craft subjects, but one-quarter was in supervisory or administrative skills (U.S. Office of Personnel Management, 1979).

A finding of particular interest indicates that blue collar federal employees received only 8.7 percent of the education/training provided, although they represented 24 percent of the population. The higher occupational status General Schedule (GS) employees received over 86 percent of all education/training provided, while comprising 71 percent of all federal civilian employees. It was also found that those with higher GS ratings had proportionately more education/training experiences than those with lower ratings, a pattern which appears to lend credence to the belief that those with less education to begin with are less likely to obtain further education or training and have less opportunity to do so.

Nearly all of the 660,000 employees of the U.S. Postal Service receive extensive training for entry and advancement and to keep up with changing technology. Training in operations is offered in about 180 Postal Employee Development Centers. In 1980, 723,000 participants attended brief courses in many specific operational procedures, averaging a few hours each. About six thousand spent several weeks learning equipment maintenance skills at the Technical Center in Norman, Oklahoma. Ten thousand took correspondence courses provided by the Postal Service. Seven thousand studied accounting, financial management, supervision, and other management skills at a Management Academy in Potomac, Maryland, and at major field centers, in such subjects as accounting, financial management, and supervision (Goldstein, 1984).

MILITARY EMPLOYEES: In contrast to the objective of education/training for civilian employees, the purpose of military training is to adequately train, principally, incoming personnel to assume specific jobs in military units. Characteristics of this training are as follows: over 33 percent of all DOD military training is designed to provide initial orientation and indoctrination; over 55 percent is specialized skill training; and over 95 percent is designed to provide new skills to participants. DOD offers over 7,000 different courses, ranging in length from five to twenty-five weeks. On any day of the year, an average of 214,000 people are in a formal training course, with many people attending more than one course in a given year. In FY 1978 the military provided about 214,000 person-years of training, representing approximately 1.5 million people who received training during the year (U.S. DOD, 1981).

Across the four military branches, over 90 percent of recruit training graduates go on to skill training schools. Many of the skills taught (about 90 percent) are related very closely to civilian skills, such as communications, medical services, food preparation, and maintenance and repair of vehicles and sophisticated electronic equipment.

In addition to the military training cited above, it is estimated that about 575,000 service people participate in the Voluntary Education Program, as part-time students during their free time at some 1,000 cooperating colleges and universities. Each branch of the military operates its own programs, through cooperative arrangements with civilian schools, with 75 percent of tuition costs reimbursed by the military. There are also three major programs that are open to learners in all four branches of the military: (1) the Defense Activity for Non-Traditional Education Support (DANTES) administers several credit-by-examination programs including CLEP, ACT, SAT, and overseas GED and arranges for correspondence courses from civilian schools; (2) the Serviceman's Opportunity College (SOC) is a network composed of some 360 two-year and four-year postsecondary institutions that offers flexible residency and transfer policies to service personnel; and (3) the American Council on Education's Office of Educational Credit publishes the Guide to the Evaluation of Education Experience in the Armed Services, a three-volume series which has served for the last 35 years as the standard reference work for educators for awarding credit for learning obtained in the military. Each of the branches also offers high school equivalency programs, and in 1975, 80,000 servicemen and women received diplomas through these programs.

STATE AND LOCAL GOVERNMENT EMPLOYEES: Unfortunately, there are no aggregate data available on training and education activities for state and local government employees. An estimate of 1.2 million participants represents a conservative figure for in-house training of these employees (Goldstein, 1984). On the state level, California, Texas, and New Jersey offer extensive programs to their employees (Smith, 1979).

On the local level, a 1975 survey of cities of over 10,000 population found that two-thirds of all cities operated training/education programs. Ninety percent provided on-the-job and specific skill development programs; 79 percent provided supervisory training; 40 percent offered programs in interpersonal relations; and 31 percent had team-building programs. Seventy-three percent of the cities used a college or university to provide the education/training program, while other major outside providers used included state agencies, private consultants, and professional associations (Brown, 1976).

B. Federal Employment and Training Programs. The federal government, through an array of employment and training programs, provides significant education and (re)training opportunities, particularly for the disadvantaged would-be worker and for the dislocated worker. These target groups include displaced workers from declining industries, older workers who have lost their jobs, low-wage workers, and workers in declining communities - all those considered "troubled workers in the labor market" (Freeman, 1981). Most recently, federal programs for the unemployed and disadvantaged workers have included: the Comprehensive Employment and Training Act of 1973 (CETA) and its successor, the Job Training Partnership Act (JTPA); the Work Incentive (WIN) program; and the Trade Act of 1974.

1. CETA: A total of 2.9 million people participated in work and training programs under CETA in FY 1981 (compared to 3.6 million participants in FY 1980). About 2,145,000 of these were first time participants, broken down as follows:

652,000 under Title II B&C	-	Services for the disadvantaged; upgrading and retraining
118,000 under Title II D	-	Transitional employment for the disadvantaged
133,000 under Title III	-	Special national programs and activities

1,077,000 under Title IV - Youth programs

118,000 under Title VI - Countercyclical public service employment

74,000 under Title VII - Private Sector Initiative Program

35,000 under Title VIII - Young Adult Conservation Corps

It should be noted that the data do not separate out education and training and that the data for adults and youth are combined. We do know that the Private Sector Initiative Program (which survived under JTPA) served 117,000 participants (66 percent of whom were age 22 or older) in FY 1981, with classroom training, the largest component, accounting for 54 percent of program expenditures and on-the-job training accounting for 20 percent of program expenditures (U.S. DOL, 1982).

ii. THE WIN PROGRAM: This program is designed to help welfare recipients find jobs and become self-supporting. Training is provided to those lacking job skills. In FY 1981, 276,000 people, 72 percent of them women, participated in the work and training components of WIN, which included on-the-job training, public service employment, institutional training, work experience, and job search training.

iii. THE TRADE ACT OF 1974: This legislation specified that workers "adversely affected" by increased imports of articles similar to those produced by the workers' firms (i.e., workers laid off due to decrease in sales or production) were entitled to adjustment assistance benefits. These benefits include training and related services, where it is determined that suitable employment (which may include technical and professional employment) would be available if the worker received appropriate training. The Act goes on to specify that, wherever possible, such training should be provided on the job.

According to Department of Labor figures, almost 1,600,000 workers filed applications for employability services under the Act from April 1975 through September 1982. Of these, approximately 441,000 applied for employment services and 48,155 entered training. Only 19,200 actually completed the training program. Types of training provided were similar to those provided under CETA, such as machine tool, welding, secretarial, electronics, clerical, LPN, etc. These training slots were approved by local employment service staff on an individual referral basis and varied with labor market demands. Under the Omnibus Budget Reconciliation Act of 1981, eligibility for trade adjustment assistance was tightened, with benefit recipients required to accept training or expand their job search beyond their home areas after the first eight weeks of eligibility. Budet outlays were sharply reduced, and the numbers of participants declined dramatically, from 573,200 certifications in 1980 to 27,948 in 1981 and 15,473 in 1982, with a small upsurge in 1983 of 40,664 workers certified (U.S. Department of Labor, 1984).

In separate studies conducted by GAO, it was found that eligible apparel workers in Pennsylvania rarely sought training under the Act and that most New England workers covered by the Act received only income maintenance; few benefitted from training. In general, it appears that only a small proportion of these eligible for training under the Trade Act of 1974 actually took advantage of this opportunity. "Obviously trade adjustment assistance has not demonstrated the exemplary virtues of training and retraining hoped for in facilitating shifts in labor and ouput to more competitive (or more productive) employments" (Stewart, 1980).

C. Veterans Education. The Veterans Administration provides educational benefits to veterans and the children and spouses of veterans who died or were totally or permanently disabled as a result of their service. In FY 1982, 778,000 veterans and 91,000 family members received educational benefits. Half the benefits went for residential college-level studies, while remaining benefits were used for vocational/technical training, correspondence courses, and other training. An additional 31,000 disabled veterans received training under a vocational rehabilitation program (U.S. Bureau of the Census, 1983).

D. Agriculture Cooperative Extension Service. Since 1914, states and counties have worked cooperatively with the Extension Service of the U.S. Department of Agriculture to provide educational services under four program categories: agriculture and natural resources; home economics; 4-H youth; and community resource development. These programs are designed with the active involvement of local people, in an effort to reflect local priorities and needs. Priority targets in most states include farmers and ranchers, agriculturally related businesses, farm and rural families, and rural communities.

In general, rather than offering courses, Extension Service agents use intensive individual and group contact methods, supported by mass media approaches to farmers and rural people, while mass media communication methods are most frequently used to serve urban consumers. More than 4,000 agricultural agents and almost 4,000 extension home economists, assisted by 5,200 area specialists and 6,000 aides provided information to rural families in FY 1980. Extension staff, aid by about 500,000 volunteers, helped operate 4-H clubs and special interest groups for young people. Extension staff also worked with local government officials on rural community resource development, including analyses of community needs, program strategies, human services, leadership skills, and citizen participation.

While there is no doubt that the Cooperative Extension Service provides a wide array of education and training services to rural America, in particular, it is almost impossible to determine the actual number of people who learn through the Service in any particular year. In FY 1980, the Service had: 33

million "clientele contacts" on farming and farm management; 30 million on home economics, family, and human development; 40 million on youth programs; and six million in community development (Goldstein, 1984). These figures include multiple contacts with the same individual and brief, infrequent contacts as well as those of a more concentrated or lengthy duration.

E. Other Federal Training. In addition to the programs noted above, the federal government also supports employment and training programs such as the Job Opportunities Program (through the Department of Commerce), on-the-job and institutional training programs for American Indians (Department of Interior), educational programs for prison inmates (Department of Justice), local recreation department programs, and National Park Service programs. The federal government also provides training for personnel in fields for which the government has a public responsibility, such as: pollution control, juvenile justice, maternal and child health care, and urban mass transportation management. No numbers are given for enrollments in these programs because the government's major role in them is as a funder, not as the provider of instruction.

5. Professional Associations

Professional associations are composed of member practitioners within a particular occupational group and are aimed at advancing the interests of the occupation as a whole as well as enhancing the occupational competence of its individual members. These associations are organized on a national, regional, state, or local basis and consist of such diverse memberships as engineers, real estate brokers, doctors, secretaries, and sociologists. They serve their members through meetings and conferences, professional publications, workshops, courses, and other educational activities. These activities are almost always part-time and are usually paid for by the participants or their employers.

Unfortunately for our purposes, the 1978 NCES survey of participation in adult education did not separate out professional associations and labor organizations; they were combined into one category. Therefore, the figure of 790,000 participants in courses sponsored by "labor organization or professional association" put forth in the NCES survey does not allow for further breakdown, although it is likely that the majority of courses were sponsored by professional associations. The survey did report that 60 percent of the 1.1 million courses given in 1978 were of one week's duration or less and that the major fields of study were business, medicine and health, law, education, and engineering.

Although there has been no comprehensive survey of the education and training opportunities offered by these various associations, we do know a little about some of the offerings. In 1977, for example, the American Society of Mechanical Engineers conducted a survey of the major engineering and technical societies in the United States and Canada. Eighty-six percent indicated continuing education programs were in operational, developmental, or planning stages. The societies reported that in 1977 approximately 1,100 courses, generally one to three days in duration, were offered to about 30,000 attendees, only 45 percent of whom were members of the sponsoring organization.

The American Management Association is a major provider of education with its 7,500 lecturers and discussion leaders, and the provision of almost 100,000 courses for management personnel in a recent year (Anderson et al., 1982).

The American Banking Association also provides courses to its members, on site as well as by correspondence.

Many of the courses offered by these professional associations and others are accredited by the Council on Noncollegiate Continuing Education.

6. Labor Unions

According to the Department of Labor, there are 224 national and international unions in the United States, including professional and state associations that are categorized as trade unions. These organizations represent approximately 20 million workers, many of whom are interested in obtaining further training and education and seek to do so either with the assistance or through the auspices of their local union. Approximately 600,000 union members, or three percent of the total membership, are involved in education and training through four major types of programs:

i. APPRENTICESHIP PROGRAMS: Approximately 500,000 persons are enrolled as apprentices in jointly operated labor-management programs. Almost 300,000 of these are registered with the Bureau of Apprenticeship and Training in the Department of Labor and receive federal funding. Over half of the registered apprentices were in construction, one-seventh in the metal trades, and one in ten in maintenance and repair trades. In addition to the registered apprentices, there are perhaps 200,000 appentices in unregistered programs. Employers operating such programs may wish to avoid government involvement (e.g. so as not to be subject to O.S.H.A. inspections) or may not want to share program control with a union (and therefore have to pay union wages).

ii. UNION EDUCATION DEPARTMENT COURSES: Approximately 75,000 union members participate in courses and institutes made available by union education departments, independent of any school or other outside institution. Most of these offerings are "tool" courses, such as shop steward training, leadership training, and contract analysis designed to improve understanding of unionism and to help union members in their duties as shop stewards and union administrators.

iii. LABOR STUDIES PROGRAMS: There are two types of labor studies programs: those offered through a university or college and those centers run by the unions themselves. There are forty-seven institutions of higher education that offer a major or concentration in labor studies, as well as numerous part-time degree programs that have been developed together with the unions (Charner, 1980). In particular, unions are engaging in more and more cooperative ventures with community colleges. In a 1977 survey, 214 community colleges (or 41% of those responding) indicated that they had developed programs at the request of unions. These programs included apprenticeship training, retraining and upgrading, and labor studies (Abbott, 1977). Among those unions actively promoting closer ties between local colleges and union members are the United Auto Workers, the AFL-CIO Education Department, the International Union of Electrical Workers, and the International Union of Operating Engineers.

The labor studies centers run by the unions also offer both degree and "tool" courses to their membership. The degree programs, made possible through affiliations with accredited institutions of higher education, are either in labor studies or liberal arts, with particular emphasis on labor-related issues. Tuition is generally free,as all of the union-operated labor studies centers are either sponsored or supported by union funds and offer programs designed exclusively for their members. Some of the better known centers include the Walter and Mae Reuther Family Education Center which offers education and training programs independently of any institution of higher education; the George Meany AFL-CIO Labor Studies Center which offers, in cooperation with Antioch College, an external degree program; and the College of New Rochelle/District Council 37 program (of the American Federation of State, County, and Municipal Employees) which "represents the first accredited four-year degree program on union premises in the history of America" (Shore, 1979).

iv. NEGOTIATED TUITION-AID PLANS: About 1,600,000 workers are covered annually under 198 negotiated tuition-aid plans in the United States (Charner et al, 1978).[3] Under the terms of these plans, the company agrees to provide financial aid to employees in order to enable them to pursue courses offered on or off company or union facilities. The most common form of tuition-aid is tuition reimbursement or advancement, with the former predominating. These plans pay for all or part of the tuition and related costs for employee enrollment in education and training courses outside of the company. In the majority of these plans, the education or training must be job-related, must be completed satisfactorily, and must not involve time-off from the job.

Another, less common form of tuition-aid is educational leave and leave of absence plans. Educational leave is provided to the worker to pursue education or training during working hours for a specified period, while leave of absence is generally for an extended period of time. Paid educational level provides employees with part or all of their regular salary together with job security guarantees, while unpaid leave provides only job security and senority guarantees.

A third form of tuition-aid is the training fund plan, under which employers set aside a specific amount of money per employee in a central fund to finance education and training opportunities for their employees. Usually administered by a board of trustees as part of an industry-wide or area-wide effort, these funds are sometimes used to establish a training institute. Occasionally, these funds are administered directly by the represented union, as in the case of AFSCME District Council #37 in New York City.

The last, and least frequently available form of tuition-aid, is the scholarship and educational loan program which offers financial grants to workers for education and training costs; the loans must be repaid according to a fixed schedule while the scholarships are outright grants.

While tuition-aid plans are generally available to a large number of workers and their families, only a very small percentage and number of workers are taking advantage of these plans. Those few studies examining worker participation rates have placed rates at between 3 percent and 5 percent, with significantly lower rates for blue-collar workers (Charner, 1980). More recent data indicate "greatly increased participation in employer tuition aid programs by lower-level employees" since 1979, when Section 127 of the tax code was implemented, exempting employer tuition aid from employee income tax. Now that Section 127 has expired, rates may well decline again (ASTD, 1984).

In addition to the programs cited above, unions also provide training to their own employees, who number about 150,000 (U.S. DOL, July 1981).

As the numbers of participants in labor studies and negotiated tuition-aid programs have been included in the figures of earlier sections (under postsecondary schools and private employers, respectively), only participants in apprenticeship programs and those programs provided by the unions alone are added here. This figure totals about 600,000 annually.

7. Community Organizations

Millions of Americans are engaged in education and training through the many community organizations in existence today. These groups include: (1) churches and synagogues and their sponsored organizations which offer traditional adult education programs, personal and family living assistance, as well as services to specific groups (day-care, summer school, etc.); (2) multipurpose organizations such as libraries, Y's, and racial/ethnic betterment organizations; (3) cultural/intellectual groups such as historical societies, literary groups, theater groups, and college/university related associations; (4) personal improvement/awareness groups; (5) senior citizen groups; (6) youth programs, such as Scouts and athletic groups; (7) recreation organizations; (8) political organizations; (9) social service groups, such as Red Cross; (10) civic/service clubs; and (11) fraternal/social groups.

In 1972, the National Center for Education Statistics conducted an extensive survey of adult education in community organizations. The categories of organizations included: churches and other religious groups, serving 37 percent of participants; Y's and the Red Cross, serving 28 percent; civic/ social service groups, serving 21 percent; and cultural and other. It was determined that about 66,770 (or 28.5%) of these organizations sponsored 14 million courses of adult instruction serving almost 11 million participants (NCES, 1974). The vast majority of these courses dealt with subjects related to community issues (31%), religion (30%), and personal and family living (20%). While religous and avocational courses predominate, some occupational training, in such areas as administrative assistant and janitorial services, is available through these local organizations.

8. Free Universities

Originating as radical, counterculture alternatives to conventional college instruction in the mid-1960's, the free universities grew from one in 1964 (at Berkeley) to 187 in 1981, with student registrations totalling 550,000 (NCES, 1981). Although most of these institutions are no longer "free," they are still committed to offering programs at the lowest possible charge. Based on the premise that "anyone can learn and anyone can teach," these institutions (two-thirds of which were founded after 1971) typically offer a wide range of courses of interest to the community-at-large with no grades, credits, or other formal credentials involved. Teachers are recruited, usually on a volunteer or part-time basis, courses and classroom locations are publicized through a catalog, and students are registered and charged a small fee at all but four of the free universities. About two-thirds of the free universities are based at conventional colleges or universities, with funds and space frequently donated by the respective student governments. The most frequently offered learning activities were: visual and performing arts (20%), home economics (15%), physical education and leisure studies (11%), and engineering and engineering-related technology (11%).

In addition to the free universities, the NCES study identified 42 campus learning referral centers that served 21,480 students in 1978 as education brokers and learning networks for people seeking information about teaching, skill training, and tutorial services.

9. Correspondence Instruction

Correspondence instruction refers to all individual programs of education or training undertaken through the mails, whether on a strictly individual basis or as part of involvement in an institutional setting (e.g. through a university extension division). Correspondence courses provide the opportunity for individuals who either do not have access to formal education programs or who do not wish to participate in them to engage in self-directed programs of instruction which may or may not result in some form of accreditation or certification.

Correspondence learning occurs in all areas of life and cuts across the boundaries of education and training opportunities offered by other organizations discussed earlier. Among those groups making use of correspondence instruction are colleges and universities, the federal government and the military, and professional and community organizations. Correspondence courses offer these groups the means to serve a varied and far-flung membership who might otherwise be unable to participate in an organized learning opportunity. Correspondence learning is the sole method of instruction used by a group of schools, providing noncollegiate, postsecondary instruction, the "correspondence schools," which are discussed in this section. The correspondence activities sponsored by other providers are discussed in the appropriate sections.

The quality of correspondence schools varies greatly. Some schools have been active for many years, have developed effective techniques of correspondence instruction through experience, and have compiled good records for responsible educational practices. Other schools, however, have been highly promotional and have taken advantage of students by "promising wonderful job opportunities, getting their money, and then using shoddy instructional methods that have resulted in high noncompletion rates" (Goldstein, 1984).

In 1955, the National Home Study Council established an accreditation commission to maintain set standards and to accredit those schools meeting the standards and other criteria. In 1978 the Council reported enrollments in member schools (excluding the military) totalled 499,000. More than 75 percent of these schools were proprietary schools or owned by companies that ran them as a sideline. The rest were private, non-profit institutions. The Council also determined that, within the "typical" NHSC institution, the average student was between 25-34 years old; three out of every four students were male; and the courses offered (which typically took about twelve months to complete) had primarily vocational objectives.

The majority of these schools specialize in only one subject, with very few offering a variegated curriculum. The largest numbers of students are enrolled in skilled trades, marketing, and distribution.

10. Private Instruction

The 1978 NCES survey found that 1,159,000 participants in adult eduction took 1.3 million courses from tutors or instructors, either by group instruction (872,000 courses) or on a one-to-one basis (442,000 courses). Over 400,000 of these courses were in the performing and visual arts, 200,000 in sports, physical education, and leisure, 200,000 in engineering and related technologies while courses in home economics, health care sciences, and languages also attracted a large number of students. This option of private instruction is one that is frequently favored by older adult learners, who may be particularly hesitant to participate in a more formal, institutional learning situation with a majority of younger students.

11. Other Providers

In addition to the institutions described above, there are many others offering courses in adult education. The 1978 NCES survey included a category of "other providers", in which 1,779,000 participants, about 10 percent of the total, were enrolled taking 2,177,000 courses. This category includes "other schools" in which 909,000 of the courses were taken and "other" in which 1,268,000 courses were taken. This latter category included any course that respondents felt did not fit elsewhere.

This group includes correspondence schools, excluding correspondence courses given by university extension services; specialized schools such as schools of music, art, dance, medical and health specialities, cooking, religion, foreign languages, physical fitness and sports; and such institutions as Chautauqua, the Aspen (Colorado) Institute, and the Bread Loaf (Vermont) Writers' program (Goldstein, 1984). Fourteen percent of the courses taken from "other" providers were with the objective of getting a license or certificate, and five percent to get a college degree. The subjects most frequently taken include medicine and public health, materials engineering, motor vehicles and other technology, physical education, sports, instruction, languages, cooking and other home-making skills, and arts.

12. Home Computers

By the end of 1984, it is estimated that a total of 11.5 million personal computers will have been purchased by schools and individuals. Most of these computers represent the "lower end" of the market, with limited memory capability. It is also estimated that consumers and schools will purchase 6,787,000 units of educational software this year, the majority of which is aimed at children under the age of 12 (Yakal, 1984).

The use of computers in schools is probably one of the main reasons for the popularity of home computers. Movement of software from the school to the home is accelerating, although, again, aimed mainly at children. The Control Data Corporation, for example, now has more than 12,000 hours of courses ranging from instruction in basic skills and computer literacy to educational games and advanced calculus. Control Data is in the process of converting many of its packages for use on personal computers, although in general school products are very seldom sold to the home market (Bateman, 1984).

As far as educational software for the adult home market is concerned, currently there is little focus on this relatively small market. Best-selling software in this area include: typing instruction; programming instruction; introduction to computer products; and similar packages. There is a small amount of "upscale" adult education marketing, aimed at the typically affluent owner of the home computer, consisting of such products as "Great Wines of America" or "How to Repair Your Car," although the graphics capability of most home computers is not yet sophisticated enough to match the level of detail available through the more traditional print media. Such "how to" software will likely proliferate once the graphics capability of home computers is enhanced (Wujcik, 1984).

As far as quality control of educational software is concerned, on the adult level there is practically no source of evaluation except for magazine review. On the school software level, the National Education Association (NEA) has been working for over a year to provide some guidance in this area. NEA reviewers have been testing educational programs submitted by software authors and publishers. Those meeting NEA's criteria are given an "NEA Teacher Certified" stamp of approval and are included in a catalog of approved software (Bateman and Darling, 1984).

Thusfar, the adult education potential of the home computer has barely been tapped. There are a number of pilot efforts being conducted currently, however, that bear promise for expansion of the adult market. Telelearning Systems of California has been working with the Educational Testing Service (ETS) for the past year to develop competency-based software that will be made available to home computer owners either through outright purchase or by tying into a network of schools affiliated with the project. Through this system, for example, an adult, working on his/her home computer, will be able to prepare for and take the College Level Examination Proficiency (CLEP) exams. Another example is the National Education Company, a network of correspondence schools that are accessing the adult market via home computers (Wujcik, 1984). Such electronic distribution networks will be getting increasing attention from educational software producers, as the costs of owning a home computer decrease and as the capabilities of the home computer increase. It is to be hoped that as adult educational software proliferates, measures will be taken to evaluate the quality and utility of these programs for the adult learner.

III. PATTERNS OF PARTICIPATION IN ADULT EDUCATION AND TRAINING

Participation of adults in education and training programs has grown significantly in the past two decades. According to the National Center for Educational Statistics, 8.27 million adults participated in education programs in 1957, with a participation rate of 7.6 percent. In 1981 the number of adult participants had increased to 21.3 million, while the participation rate jumped to 13 percent. In fact, in the three year period between 1978 and 1981 alone, participation increased by 17 percent from 18.0 million to 21.3 million adults.

In order for program and policy proposals to be developed which respond to the needs of adults, a better understanding of the patterns of participation in adult education and training is needed. We begin by looking at participation in different subgroups of adults. Reasons for participation and nonparticipation are then explored.

A. The Demographics of Adult Participation[4]

In Table 1 participation rates for adult education for six time periods are presented.

Table 1
Adult Participation in Education 1957 - 1981

Year	Participants (in thousands)	Participation Rate
1957	8,270	8%
1969	13,041	10%
1972	15,734	11%
1975	17,059	12%
1978	18,200	12%
1981	21,252	13%

Source: NCES Reports and surveys

The table shows an increase in the number of participants and percentage of participants from 8 million (8%) in 1957 to over 21 million (13%) in 1981. Participation rates, however, have been relatively constant from 1969 with only a one percentage point increase between each of the survey years except 1975-78 when there was no increase in rates.

Age is clearly related to participation in adult education. Table 2 shows the participation rates for different age groups of the adult population.

Table 2
Participation in Adult Education By Age: 1981

Age	Participants (in thousands)	Participation Rate
17-24	3,941	12%
25-34	7,509	20%
35-44	4,512	17%
45-54	2,821	13%
55-64	1,702	8%
65 or older	768	3%

Source: NCES, 1982.

The highest participation rate is found in the 25-34 year old group (20%) and the lowest rate in the 65 or older group (3%). In Table 3 trends over time are shown. For each age group the number of participants and the rates of participation have increased between 1969 and 1981. The increase in participation rates is particularly large for the two older age groups. Between 1969 and 1981 participation rates for 35-54 year olds increased by 4.1 percentage points and by 2.4 percentage points for adults 55 and older. Despite this increase in rates for these two age groups, their proportion of the total group of participants has remained at a constant 46 percent.

Table 3
Participation in Adult Education by Age:
1969, 1975, 1981

Age	1969 Participants (in thousands)	1969 Rate %	1975 Participants (in thousands)	1975 Rate %	1981 Participants (in thousands)	1981 Rate %
17-34	6,956	14.4	8,644	15.9	11,450	16.2
35-54	5,037	11.0	5,829	12.7	7,333	15.1
55 +	1,048	2.9	1,627	3.5	2,470	5.3

Source: NCES Reports

Race, like age, is related to participation. In 1981, 13.8 percent of Whites participated in some form of adult education compared to 8.6 percent for Hispanics and 7.8 percent for Blacks. Trends between 1969 and 1981 show a steady increase in participation rates for Whites (10.2 percent in 1969, 12.1 percent in 1975, and 14 percent in 1981) and a "U" shaped curve for Blacks (7.8 percent in 1969, 6.9 percent in 1975, and 7.8 percent in 1981).[5] This trend for Blacks is explained, in part, by the sharp increase in the percent of Blacks who were full-time students (and thus not included as adult education participants) between 1969 and 1975: 7.8 percent in 1969 and 9.2 percent in 1975. (In 1981 the percentage of Black full-time students was also 9.2).[6]

In Table 4 we show the relation between participation and gender. Since 1969, males have been fairly constant in their participation rates while females have steadily increased. The difference of 2.2 percentage points favoring males in 1969 reverses by 1981 with almost 14 percent of females and 12.0 percent of males participating in adult education. Thus, while participation is only slightly related to gender the trends show a steady increase for females and a constant rate for males.

Table 4
Participation in Adult Education by Gender:
1969, 1975, 1981

Gender	1969 Participants (in thousands)	Rate %	1975 Participants (in thousands)	Rate %	1981 Participants (in thousands)	Rate %
Male	6,800	11.2	8,027	11.7	9,359	12.0
Female	6,241	9.0	9,032	11.6	11,893	13.6

Source: NCES Reports

Prior educational level is one of the factors most strongly related to participation in adult education. Education has been said to be addictive and the data on adult participation in education would tend to confirm this. The more formal education adults have, the more likely they are to participate in further education. Table 5 clearly shows this relationship, with increases in educational levels for each of the three survey years.

Table 5
Participation in Adult Education by Prior Educational Level:
1969, 1975, 1981

Prior Educational Level	1969 Participants (in thousands)	Rate %	1975 Participants (in thousands)	Rate %	1981 Participants (in thousands)	Rate %
Less than High School	1,985	3.5	1,756	3.3	2,059	4.0
High School	5,067	11.3	6,396	11.9	6,998	11.1
1-3 Years' College	2,576	16.6	3,687	17.6	5,307	19.6
4 or More Years College	3,413	27.0	5,220	28.3	6,889	28.1

Source: NCES Reports

While participation rates have been relatively constant over time for each educational level group of adults, the overall rate of participation can be attributed to the increased educational level of the population. That is, because more people have higher levels of education and educational levels are directly related to participation in adult education, the overall increase in participation rates is due to higher educational levels. Specifically, 46 percent of participants in 1969 came from the two highest education groups; this increased to 52 percent in 1975 and 57 percent in 1981.

Employment status is also related to participation in adult education. Table 6 presents data on this relationship for three time periods: 1969, 1975, and 1981. In 1981, almost 17 percent of employed adults participated in an education program, compared to 11.1 percent of those unemployed and 7.5 percent of those keeping house. The gap in participation rates between employed and unemployed adults has steadily increased over time. In 1969, the difference in participation rates between employed and unemployed adults was less than three percentage points. By 1975 this had increased to 4.6 percentage points, and in 1981 the difference was almost six percentage points. Most of this difference is due to increases in the rates of participation for the employed group. This difference may be due to a number of factors. First, employed persons may have more disposable income to spend on education than do persons who are unemployed. Second, employment based tuition assistance is available to many employed persons to help them pay for education or training. Finally, because of changes in technology and job-skill requirements, many employed persons may be participating to maintain or upgrade job skills which unemployed persons do not consider because they are not in the paid labor force.

Table 6
Participation in Adult Education by Employment Status:
1969, 1975, 1981

Employment Status	1969 Participants (in thousands)	1969 Rate %	1975 Participants (in thousands)	1975 Rate %	1981 Participants (in thousands)	1981 Rate %
Employed	10,216	13.4	12,782	15.4	16,798	16.8
Unemployed	245	10.5	810	10.8	842	11.1
Keeping House	2,243	6.5	2,705	7.7	2,397	7.5

Source: NCES Reports

Income is found to be associated with participation. From Table 7 it can be seen that as income increases, so do rates of participation, from 6.8 percent for those with incomes of less than $10,000 to 18.4 percent for those who earn $25,000 or more. In terms of trends over time, this pattern has remained fairly constant with those in the higher income groups participating at higher rates than those in lower income groups. It is unfortunate that the existing data do not look at constant dollar rates, because there are clearly more people in 1981 who earn $25,000 or more than in 1969 or 1975. A larger proportion of participants come from the highest income group in 1981 than in any other year (44 percent in 1981 compared to 15 percent in 1975 and 4 percent in 1969). This is due to the fact that a higher proportion of the population falls into this income group in 1981 than in earlier years.

Table 7
Participation in Adult Education by Income:
1969, 1975, 1981

Income	1969 Participants (in thousands)	Rate %	1975 Participants (in thousands)	Rate %	1981 Participants (in thousands)	Rate %
Under $10,000	5,479	7.1	4,271	7.8	2,614	6.8
10,000 - 14,999	3,799	11.7	4,294	12.9	2,791	13.1
15,000 - 24,999	2,248	13.2	5,408	15.9	6,150	14.2
25,000 +	516	13.9	2,372	17.7	8,961	18.4

Source: NCES Reports

Type of occupation is also related to participation in adult education. As Table 8 shows, certain occupational groups have higher participation rates than other groups. Specifically, professional/technical (33.1%), managers (18.9%), sales (17.7%), and clerical (17.2%) occupations have higher rates than other occupations. If we group these occupations into upper white collar (professional/technical, managers, and administrators), lower white collar (sales and clerical), and blue collar, the differences in participation rates are even clearer. Over 27 percent of the upper white collar group participate compared to 17.3 percent for other white collar and 10.7 percent for blue collar workers. The more highly paid, highly skilled, and highly educated occupational groups (upper white collar) have considerably higher rates of participation than those groups which are lower paid, less skilled, and less educated. We assume that much of this difference is due to the higher income and educational levels of this group.

Table 8
Participation in Adult Education by Occupation: 1981

Occupation	Participants (in thousands)	Rate %
Professional/Technical	5,352	33.1
Managers and Administrators	2,145	18.9
Sales	1,132	17.7
Clerical	3,193	17.2
Crafts and Kindred	1,732	13.4
Operatives	770	7.2
Transport Operatives	274	7.1
Nonfarm Laborers	342	7.3
Service	1,703	13.1
Farmers	186	6.8

Source: NCES, 1982.

Place of residence is somewhat related to participation. Adults who live in metropolitan areas had a participation rate of 13.6 percent in 1981 compared to a rate of 11.2 percent for adults living in nonmetropolitan areas.

Region also seems to affect participation rates, with adults who live in the West participating at a much higher rate than others (17.6 percent for West, 13.5 percent for North Central, 11.2 percent for South, and 10.3 percent for Northeast).

A summary of the demographic patterns of the 21 million (13%) participants in adult education suggests the following:

- Adults between 25 and 44 years old participate at a higher rate than younger or older adults.
- Blacks and Hispanics participate at lower rates than Whites.
- Participation rates for females have increased over the past decade and are now higher than the rate for males.

- Prior educational attainment is the factor most closely related to participation. With every increment in education, participation increases. Over one in four adults with a college education or more participated in adult education in 1981.

- Employed adults are more likely to participate than are unemployed adults or adults keeping house.

- Income is strongly related to participation. For each increment in income level, there is a marked increase in participation rates. In 1981 almost 44 percent of participants earned $25,000 or more.

- Adults in professional and managerial occupations participate at higher rates than other white collar and blue collar occupational groups.

- Adults living in the West participate at higher rates than those living in other parts of the country, while those from the Northeast have the lowest participation rates.

B. The Reasons for Adult Participation in Education

Above, we saw that White, well educated, higher income, higher occupational status, 25 to 44 year old adults have the highest rates of participation in adult education. Here we examine the distribution of participants with respect to their reasons for participating and compare subgroups of adults whenever possible.

The 21,252,000 adults who participated in adult education programs in 1981 took a total of 37,381,000 courses. Generally, the reasons for adult participation in education fall into three broad categories: job or career; personal or social; and general education. In Table 9 the more specific reasons under each category are presented.

Table 9
Reasons for Adult Participation in Education:

Category	Specific Reasons
Job or Career	Learning new skill and knowledge to keep up with changing technology
	Improving skills for current job
	Promotion or increase in income
	Career advancement
	Career change
	Acquisition of credentials
	Union operation
Personal or Social	Consumerism
	Retirement
	Family living
	Better citizen
	Community activities
	Political awareness
	Volunteer work
	Hobbies
	Leisure
General Education	Completion of an academic degree program (AA, BA, MA, or GED)
	Acquisition of general knowledge
	Remedial learning or basic skills

Sources: Barton and NIWL, 1982; Carp et al., 1974; Charner, 1980; Cross et al., 1974; Cross 1978, 1979, 1981; Goldstein, 1980, 1984; Lusterman, 1977; NCES, 1978, 1982; Peterson and Associates, 1979; Shore, 1979; Shy, 1984.

In order to assess the reasons for participation in adult education, three different but related measures are discussed. The first assesses the participant's main reason for taking a course. The second looks at the general subject-matter area the course was in, and the third determines if the course was taken to meet a degree, certificate, diploma, or license requirement. Table 10 presents the reported main reason for taking courses for adult education participants in 1981.

Table 10
Main Reason for Taking Course for Adult Education Participants: 1981

Main Reason	Number of Courses Taken by Adult Participants (in thousands)		Percent	
I. Job or Career	(22,534) *		(60.4)	
A. To get new job		4,398		11.8
B. To advance in job		16,659		44.6
C. Other job related		1,477		4.0
II. Personal or Social	(11,135)		(29.9)	
A. Volunteer work		490		1.3
B. Personal/social interests		10,187		27.3
C. American citizenship		60		.2
D. Other		398		1.1
III. General Education	(3,603)		(9.6)	

* Category total in parentheses

Source: NCES, 1982.

Clearly, the job or career related and personal or social categories represent the primary reasons for participation in adult education.

Looking at the types of courses taken shows that nearly half were in the fields of business (23%), health care (11%), and engineering (10%). Specific course breakdowns are presented in Table 11.

Table 11
Type of Courses Taken by Participants in Adult Education: 1981

Type of Course	Number (in thousands)	Percent
Agriculture	499	1.2
Arts	2,373	6.3
Business	8,564	22.9
Education	2,926	7.8
Engineering	3,654	9.8
Health care	3,993	10.7
Health education	1,150	3.1
Home economics	1,245	3.3
Personal services	713	1.9
Language and literature	2,184	5.8
Life sciences	1,205	3.2
Philosophy-religion	2,606	7.0
Physical education	2,377	6.4
Social sciences	1,929	5.2
Interdisciplinary studies	337	.9
Other	1,678	4.5

Source: NCES, 1982.

A third way of looking at the reasons for participation is to assess the stated objectives for taking the course. Fifteen percent of the courses were taken to obtain or renew a license or certificate, 24 percent were taken for some school credit objective, and the remaining 61 percent for some other objective. The specific breakdowns for the school credit and trade or professional objectives are provided in Table 12.

Table 12
Objectives for Taking Courses by Participants in Adult Education: 1981

Objective	Number (in thousands)	Percent
Elementary or high school diploma	1,017	2.7
Vocational certificate/diploma	1,190	3.2
Two-year college degree credit	2,204	5.9
Four-year college degree credit	2,531	6.8
Postgraduate or professional degree	1,974	5.3
To obtain a license or certificate	2,584	6.9
To renew a license or certificate	2,835	7.6
Other	22,852	61.1

Source: NCES, 1982.

In order to gain a better understanding of the reasons for participation, the main reason for taking courses is looked at for specific types of courses and for different objectives in Table 13.

Table 13
Main Reason for Taking Courses by Objectives and Type of Course for Adult Education Participants:
1981
(In Percentages)

Objective	Job or Career	Personal or Social	General Education
	Main Reason		
Elementary or high school diploma	11.4	21.3	68.0
Vocational certificate diploma	81.8	6.6	3.3
Two-year college degree credit	63.7	8.6	25.9
Four-year college degree credit	49.6	7.7	41.9
Postgraduate or professional degree	84.4	4.9	10.4
To obtain a license or certificate	89.5	7.1	3.3
To renew license or certificate	93.4	5.2	.8
Type of Course			
Agriculture	67.5	29.0	3.8
Arts	19.2	73.3	7.1
Business	85.3	7.1	7.5
Education	69.3	12.4	17.7
Engineering	83.7	10.9	5.3
Health care	81.2	15.6	2.2
Health education	56.6	39.2	3.9
Home economics	14.1	81.8	4.0
Personal services	77.8	20.1	2.0
Language and literature	39.1	36.9	23.5
Life sciences	48.3	13.1	38.1
Philosophy-religion	31.2	57.7	10.9
Physical education	5.8	92.6	1.5
Social sciences	62.2	16.0	17.7
Interdisciplinary studies	28.5	26.4	23.4
Other	59.1	34.9	4.7

Source: NCES, 1982.

With regard to the objective for taking the course the table suggests the following:

- elementary and high school diploma courses are taken primarily for general education (68%) and to a lesser extent personal/social reasons (21%);
- vocational certificate/diploma courses are primarily taken for job or career reasons (82%);
- two-year college diploma credit courses are taken for job or career (64%) and to a lesser extent general education (26%) reasons;
- job or career (50%) and general education (42%) are the main reasons for taking four-year college degree credit courses;
- job or career is the primary reason (84%) for taking postgraduate or professional degree courses; and
- job or career is the main reason for taking courses to obtain a license (90%) or renew a license (93%).

Clearly, most courses, regardless of the objective, are taken for job or career reasons. Only elementary or high school diploma courses are not taken in at least half of the cases for job or career reasons.

When the reason for taking different types of courses is looked at we see that most courses are taken for job or career reasons. Not one type of course is taken for general education reasons in at least half the cases. Personal or social are the reasons for taking the course in at least half the cases for only four types of courses (art, home economics, philosophy-religion, and physical education).

The table suggests that regardless of the objectives for taking a course or the type of course taken, most courses are taken for job or career reasons.

Are there any differences in the reason for taking courses among different groups of adults? When reasons for participation are looked at comparing different racial/ethnic, sex, age, and employment groups of adults, a number of interesting differences do emerge. Table 14 presents the main reason for taking courses for male and female participants in adult education. Males are more likely than females to be taking courses for job or career related reasons (69 percent vs. 54 percent) while a higher proportion of women (36%) than men (21%) participate for personal or social reasons. Men are more likely to take engineering/engineering technology courses (18 percent vs. 3 percent), and business courses (26 percent vs. 21 percent) while women more often take health care/sciences (13 percent vs. 8 percent), arts (8 percent vs. 4 percent), education (10 percent vs 6 percent), home economics (5 percent vs. 1 percent), and physical education/leisure (8 percent vs. 4 percent) courses.

Table 14
Main Reason for Taking Course for
Male and Female Adult Education
Participants:
1981
(In Percentages)

Main Reason	Male	Female
Job or Career	69.2	53.5
Personal or Social	21.2	36.4
General Education	9.3	9.9
Not Reported	.2	.4
N (in thousands)	16,182	21,199

Source: NCES, 1982.

Differences in reasons for participating are also found among racial/ethnic groups. Specifically:

- Blacks (62%) and Whites (61%) are somewhat more likely than Hispanics (53%) to participate for job or career reasons;
- a higher proportion of Hispanics (33%) and Whites (30%) participate for personal or social reasons than do Black adults (21%); and
- Blacks (17%) and to a lesser extent Hispanics (13%) are more likely to participate for general education reasons than are White adults (9%).

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In Table 15 the reason for taking courses for adults from different age groups is presented. The table suggests that adults in the two oldest age groups (and particularly the oldest age group) are more likely than others to participate for personal or social reasons. Those adults in the youngest age group, on the other hand, are far more likely than others to participate for general education reasons, with those between 25 and 54 years old most likely to participate for job or career reasons. From these data we conclude that the reason for taking a course is related to age, with younger adults participating for general education reasons, middle-aged adults for job or career reasons, and older adults for personal or social reasons. The age factor would seem to be related to the individual's life or career stage. Specifically, younger adults who are still exploring career and life options would be inclined to take general education courses to help with this exploration and acquisition of general skills and knowledge. Middle-aged adults, who are in the middle of their careers or who are in career transition, would be more likely to take courses related to their current jobs or future jobs/careers. Older adults, who are considering retirement or leisure pursuits to accompany the end of their occupational careers, would be more likely to take courses for social or personal reasons.

Table 15
Main Reason for Taking Course by
Age of Adult Education Participants:
1981
(In Percentages)

	Age					
Main Reason	17-24 Years	25-34 Years	35-44 Years	45-54 Years	55-64 Years	65 years and over
Job or Career	52.8	62.9	65.6	65.1	56.1	25.3
Personal or Social	26.8	26.8	28.3	28.6	39.7	68.5
General Education	20.2	10.0	5.9	6.0	3.9	5.4
Not Reported	.2	.3	.2	.3	.3	.8
N (in thousands)	6,784	13,628	8,191	4,780	2,863	1,134

Source: NCES, 1982.

Finally, we look to see if there are any differences in the reasons for taking courses among adults with different labor force status. The following was found:

- employed adults (68%) and to a lesser extent unemployed adults (50%) were far more likely than those keeping house (19%) to take courses for job or career reasons;
- a much higher proportion of adults who keep house (70%) take courses for personal or social reasons than do unemployed (26%) or employed adults (24%); and
- almost one-quarter of unemployed adults taking courses (23%) do so for general education reasons compared to ten percent of adults who keep house and eight percent of employed adults.

To conclude this section on reasons for participation, the following observations seem reasonable. First, most adults report that they participate for job or career reasons, most notably to advance in a job. Second, a relatively large proportion of adults participate for personal or social reasons. This is particularly true for women and older adults. Third, the highest percent of courses taken are business, health care, and engineering. Fourth, by far the highest proportion of adults take courses for other than educational credit or licensure reasons. Fifth, males are more likely than females to take courses for job or career related reasons. Sixth, younger adults are more likely to take courses for general education reasons, middle-aged adults are more likely to take courses for job or career related reasons, and older adults are more likely to take courses for personal or social reasons.

C. The Reasons for Nonparticipation in Adult Education

Just as there are many reasons for participating in education, there are a large number of reasons for not participating. These reasons or barriers can be classified as follows: situational, social-psychological, and structural. The factors that fall under each category will be discussed, as well as differences among population subgroups. In Table 16 the specific factors under each category are presented. It is important to note at this time that there are no national analyses of reasons for nonparticipation. NCES which looks at participation in adult education every three years does not ask the 144,578,000 nonparticipants in adult education why they do not participate. The analysis in this section, therefore, relies on other studies that are locally or state based rather than national.

Table 16
Reasons For Adults Not Participating in Education

Category	Specific Reasons
Situational Barriers	Costs
	Lack of time
	Age
	Prior educational attainment
	Home responsibilities
	Job responsibilities
	Occupational status
	Level of income
Social-Psychological Barriers	Lack of confidence in ability
	Feeling too old
	Low self-concept
	Tired of school
	Lack of interest
	Family or friends don't like the idea
	Hesitate to seem too ambitious
Structural Barriers	Course scheduling
	Work schedule
	Lack of transportation
	Inconvenient location of courses
	Lack of relevant courses
	Financial support restrictions
	Too long to complete program
	Don't want to go full-time
	Too much red tape
	Lack of information on courses
	Lack of information on support assistance
	Inadequate counseling

Sources: Barton and NIWL, 1982; Carp et al., 1974; Charner, 1980; Cross, 1978, 1979, 1981; Cross et al., 1974; Peterson and Associates, 1979.

Situational barriers are those factors which arise out of an individual's position in a family, workplace, or social group at a given time. Such factors are most often reported as barriers and, within this category, costs, lack of time, age, and level of education head the list. Cross (1978) in her review of state and local surveys estimates that about one-third of all adults report costs and lack of time as a barrier. Botsman (1975), in an earlier study of blue collar workers, found 48 percent perceiving costs as a barrier and 31 percent perceiving time as a barrier to education. Carp et al. (1974) in their study of "would-be learners" found 53 percent reporting that costs and 46 percent reporting that lack of time were barriers to participation in education.

In almost every study of adult participation in education, age, race, and prior education are found to be related to participation and thus in a negative sense act as barriers to participation. The relationships between participation in education and age, race, and previous educational attainment were shown earlier in this paper. We showed that participation rates increase as level of prior educational attainment increases, decrease as age increases, and are lower for Black adults.

When demographic differences are looked at, the following factors emerge. Costs are problems for women, younger adults, Blacks, and those with less education. Lack of time, on the other hand, is a problem for men, middle-aged adults, Whites, and adults with higher levels of educational attainment.

Before turning the discussion to the next category of barriers, it is important that we highlight a potential problem with the measurement of barriers. Many situational factors may represent socially acceptable responses to "why a person does not participate in educational activities." Lack of time and money are both acceptable reasons for not participating, and it is not surprising that they rank high on the perceived barriers list. In one study (Wilcox et al., 1975), respondents were asked to report barriers to their own learning and to speculate on why other adults did not participate. Lack of interest was attributed to others (26 percent), but only 2 percent admitted that lack of interest deterred their own participation. Costs, however, were a problem for respondents (18 percent) more than it was perceived as a problem for others (11 percent). Social acceptability of situational factors may therefore be a response bias in surveys of this type.

Related to this problem is the fact that many who cite costs or time as barriers may have no idea of the costs of various options or the time required for different programs or options. With the growth of free or low cost community colleges and adult basic education programs, cost may be an imaginary rather than a real factor. Scheduling is the most common modification of education to accommodate the time needs of adult education participants. Evening and week-end colleges; short seminars, workshops, and courses; self- paced scheduling; and technologically delivered instruction have helped to eliminate the time barrier for those adults who are aware of these options. Future surveys should look at knowledge of costs and time requirements to provide a sounder basis for assessing these two situational barriers. One analysis that does look at the cost factor in an innovative way was done by Cross (1982). In looking at the impact of Proposition 13 on California community colleges, she concludes that there is "little doubt that the dramatic reduction in public funding for education made a highly significant difference in adult education in California in the fall of 1979" (1982:103).

Social-psychological barriers are those factors related to the attitudes and self-perceptions an individual has or to the influence of significant others (family, friends, etc.) on the actions of the individual. Only small proportions of adults report such factors as barriers to their participation in education or training activities. Included in this category are lack of confidence in ability, feeling of being too old, lack of interest, and lack of support from family or friends. Carp et al. (1974) found only 12 percent of their sample reporting lack of confidence and 17 percent who felt they were too old to begin. Botsman (1975), in his study of blue collar workers, reported 21 percent feeling too old to begin and 18 percent with a lack of confidence in ability. Finally, Charner et al. (1978) found 6.1 percent of unionized workers feeling they were too old and 8.8 percent not wanting to take courses. Other factors that are mentioned as barriers which fall into this category include: "don't enjoy studying", "tired of school", "lack of interest", "friends or family don't like the idea", and "hesitate to seem too ambitious." Each of these other factors was reported as a reason by less than 10 percent of adult workers. Compared to the situational factors, these social-psychological factors are not perceived as barriers by a large group of adults. Only minor differences between groups of adults are reported for these factors.

Women more frequently than men report that they feel they are too old to begin. Men, on the other hand, cite lack of confidence in ability more than women. Variation by age is found for lack of confidence in ability and feeling too old to begin, with younger adults more often reporting a lack of confidence and, not surprisingly, older adults more often feeling too old to begin. Racial differences are found only for lack of confidence in ability, with a higher proportion of Blacks than Whites mentioning this as a barrier. Differences related to educational level show those with less education citing lack of confidence in ability more often than those with more education.

As with the situational barriers, there are problems with measurement for this set of factors. Social-psychological barriers are opposite situational barriers in social acceptability, and response bias may result. The importance of these factors is probably underestimated in surveys because they are less socially acceptable responses than are other reasons for nonparticipation. A second problem for determining the "real" impact of social-psychological barriers is methodological in nature. That is, respondents who are not interested in further education are often dropped from analyses or self-select themselves out by not responding to barrier questions. The remaining group is considered "potential" learners. Potential learners are probably less affected by social-psychological factors than those adults who say they have no further interest in education.

Structural barriers are policies and practices of organizations that overtly or subtly exclude or discourage adults from participating in learning activities. These factors fall between situational and social-psychological barriers in the proportion of adults reporting such factors as deterring their participation.

The array of structural factors can be grouped under the following areas: scheduling problems (course and work); location and transportation problems; lack of courses or relevancy of courses; procedural problems (red tape, credit, admission, full-time); and information/counseling problems. Of these factors, location, scheduling, and lack of courses are most often mentioned as barriers with few differences between subgroups of adults. Cross (1978), in a review of studies of the needs and attitudes of adult learners, found that generally one-fourth of all survey respondents reported these as barriers to their participation.

Lack of information has been found to be a factor affecting participation by relatively fewer respondents (Cross, 1978). Carp et al. (1974) found only 10 percent of would be learners reporting lack of information as a barrier. When different groups of workers are looked at, however, the findings differ. Lack of information was cited by 18 percent of blue collar workers (Botsman, 1975), and 42.6 percent of unionized workers (Charner et al., 1978). In one study that asked about counseling, 50.7 percent felt they did not receive enough counseling about available courses or whether they were qualified to take them (Charner et al., 1978).

Despite the fact that between 10 and 40 percent of adults cite lack of information as a barrier, it may be even more critical than reported because many of the other structural problems may ultimately be due to lack of information about the options that do exist. Information does seem to be a bigger problem for adults with lower levels of education and those who are in lower status occupations.

What do the patterns of participation (and non participation) suggest about the ability of the education/training system to serve the needs of adults seeking further education and training for career transitions? The demographic patterns suggest that young, White, well educated, higher income, higher occupational status, employed adults have the highest rates of participation in adult education programs. When reasons for nonparticipation are assessed, these are found to be related to socioeconomic status, race, and prior educational attainments (particularly those related to fears: motivation, costs, and information). And, at the same time, the main reasons for participating are most often related to occupational mobility or personal/social development. The patterns of adult participation in education, then, would suggest that the education/training system is not adequately serving the career transition needs of those adults in most need. In fact, if those adults who do participate meet their objectives, then the gap between the "haves" (who tend to be participants) and the "have nots" (who tend to be nonparticipants) will widen and make it that much more difficult for the education/training system to meet the needs of adults (the "have nots") seeking job and career changes.

IV. ADULT EDUCATION AND TRAINING PROGRAMS: AN ASSESSMENT OF THEIR EFFECTIVENESS

In Section II of this paper it was shown that the number and diversity of education and training programs for adults have been increasing and in Section III we documented the increasing numbers of adults participating in these programs. But, how effective are these programs in overcoming barriers to participation and increasing access for the adult "have nots" seeking job and career changes? In this section a number of education and training programs are examined in an attempt to determine those factors that are related to program success.

We begin by looking at a number of programs that have been developed to serve the needs of adults seeking further education and training for career transitions. Where possible the effectiveness of these education and training programs for preparing adults for new jobs and careers will be assessed and different approaches compared. Common program themes then will be identified, followed by an analysis of the critical program components that effectively respond to the problems/barriers faced by adults.

There have been few analyses of the effectiveness of various kinds of education and training programs. The literature of college impacts looks at the effects of college on a wide array of attitudes and behaviors. Beginning with Newcomb's (1943) classic study of Personality and Social Change through the ongoing studies of Alexander Astin and his colleagues in the Higher Education Program at UCLA, these analyses have focused on traditional college students. Studies of adult participation in education, most notably the tri-annual studies of NCES, have not assessed the effectiveness of various programs in terms of participant outcomes. The evaluations that do exist have been piecemeal and tend to look at short term outcomes in terms of social status, income, and occupational attainments. They have not focused on the ability of these programs to overcome the barriers faced by adults, on differences among population subgroups served, or on longer term impacts. Because of the paucity of data, it is not possible to assess the impact of different institutions or programs on job or career related outcomes for adults. Rather we must rely on an examination of a number of specific programs and try to generalize to the broader arena. The programs we have selected for examination are examples of the types of programs that have been developed to serve adults seeking further education and training for career transitions. The criteria for selection of the programs are as follows:

1. Address multiple barriers.
2. Use innovative approaches to serve adults.
3. Serve special populations of adults not usually served by traditional institutions or programs.
4. Involve businesses or the community.

The programs being examined are relatively new, and long term, hard evaluation data do not exist. Our purpose in looking at them is to assess their ability to overcome barriers to participation that are faced by the adult population being served. They serve as examples of strategies that can be adapted or adopted in other settings to meet the education and training needs of adults.

A. Assessing Adult Education and Training Programs

In the past two decades, and particularly in the last four to eight years, the numbers of adult participants in education and training programs have grown at an unprecedented rate from 8.3 million in 1957 to over 21 million in 1981. These adults have participated in education and training programs ranging from literacy programs for illiterate adults and speakers of other languages, to retraining programs for displaced workers, to entrepreneurship programs for individuals interested in small businesses. In looking at the effectiveness of a small sample of these programs the focus is on overcoming barriers to training and reemployment, that is, the analysis pays particular attention to programs that have been developed for displaced workers or other adults who may need education or training to make job or career transitions. Three sample programs will be analyzed and two newer efforts described. The three programs that will be analyzed are:

1. The Intensive In-Plant Technician Training Model
2. The Grass Roots Computer Literacy for Rural Adults Project
3. The Postsecondary Adult Literacy Education Project

The two programs that will be described are:

4. The Cascade Business Development Center
5. The UAW-General Motors Joint Skill Development and Training Program

The examination of these programs will look, where possible, at the following issues:

1. What are the goals of the program?
2. What barriers to participation are addressed by the program?
3. What is the client group served by the program?
4. What training or services are provided?
5. What pedagogical approaches are used?
6. What is the impact of the program on placement into new jobs, increased responsibilities, job advancement, wages, and skills?
7. What are the weaknesses or problems with the program?
8. Have barriers been overcome?

Before beginning this assessment of program effectiveness, two critical points must be made. First, the number of "hard" evaluations of these programs has been very limited. Many of these programs are new and still in their developmental stages while others had no evaluation component built in. Where "hard data" do not exist, impressions and other "soft" information will be used for the assessment. Second, the programs that are reviewed are representative of adult education and training programs and should not be considered to be the universe of the programs in this area.

1. Intensive In-Plant Technician Training Model

Program Operator: Rio Salado Community College (AZ).

Program Goals: The Intensive In-Plant Technician Training Model has two primary goals. The first is to train technicians to respond to the needs of local industry. The second is to provide a means of upward mobility for women and minorities who did not have the opportunity for advancement or postsecondary education and training.

In the fall of 1981 this one-year Associate of Science degree program, delivered at the workplace, was developed to provide upward mobility opportunities to women and minority assembly line workers in the electronics industry. These groups had not had opportunities for advancement in the industry and they had little opportunity for participation in postsecondary education or training. Traditionally technicians in this industry have been men while women have tended to fill the ranks of the assembly line. The objective was to move more women into technician positions.

Barriers Addressed: The program addresses a number of situational, social-psychological and structural barriers.

SITUATIONAL: Costs - for the program are covered by the company who pays tuition, books, and salaries of participating employees; Time - participants are full-time students while collecting their full salaries; Job responsibilities - participants are not responsible for performing any job duties while they are students.

SOCIAL-PSYCHOLOGICAL: Lack of confidence - tutorial assistance is available to participants as is group and individual counseling.

STRUCTURAL: Course scheduling - all courses are offered during regular work hours; Location - all courses are offered at the worksite; Lack of relevant courses - all courses are part of a degree program in technician training; Length of program - the program is one-year in length; Lack of information - all eligible employees receive information on the program; Lack of counseling - both individual and group counseling is offered.

Client Group Served: The program is aimed at women and minority assembly line workers in the electronics industry who have not had the opportunity to advance in the industry. One-hundred thirty individuals have participated in the program over two years.

Training and Services Provided: The training and services provided are those necessary to meet the requirements for an Associate of Science degree for either an electrical technician or semi-conductor technician. Normally a two-year degree program, the 64 credit program has been compressed into one year. The curriculum which was developed jointly by the college and the industry is competency-based with highly concentrated courses. By competency-based the program means courses that have been developed with a standard description, specific objectives, and a set of specific activities to meet these objectives. Each participant is tested to assess his/her competence (ability to meet the objectives). Courses are concentrated in a short time period of 5 weeks with classes meeting for 3 1/2 to 4 hours five days per week. The courses meet for the same number of hours as traditional programs but are concentrated in four weeks as opposed to 16-18 weeks.

The following courses comprise the program with all students required to take all courses.

- One week orientation covering career awareness and career development
- Economics
- D.C. Theory-Introduction to Electronics I
- Speech
- Stress Management
- Drafting
- Active Circuits I
- Integrated Circuits
- Instrumentation
- Digital and Logic Circuits
- Introduction to Algebra
- Math for Technicians
- Freshman English
- General Psychology
- A.C Theory - Introduction to Electronics II
- Circuit Analyses
- Conceptual Physics
- Active Circuits II
- Pulse Circuits
- Microwave UHV/RF
- Solid State Devices

In addition seminars are given in the following: microprocessing; soldering; experimental design; psychology of management; and resume writing. Finally, all participants take part in on-the-job training cooperative work experience when they actually work at technician jobs in the plant.

A number of services are also provided to participants. A counselor from the college is available at the worksite one day per week for individual counseling. A group counseling session also is required once per week.

The industry provides the students for the program from the ranks of its assembly line employees. The company pays the employee's salary for the entire year of the program in addition to all applicable tuition and book costs. The company also has provided a Technical Training Center at the worksite consisting of two classrooms (for instruction) and 18 lab stations (for instruction and practice). A full-time director, lab technician, and secretary are also provided by the company. The cost for the program runs at about $18,000 per student. This includes student salaries but not facility and staff costs.

Pedogogical Approach: All students go through the program together. Each class consists of about 26 students who remain together for all classes throughout the year. The group forms a support system for each participant. The courses are all very concentrated with instruction combining lecture and hands-on experience. Computer Assisted Instruction is used only for tutorial assistance in electronics areas.

Program Impact: Ninety-eight percent of participants completed the program and 95 percent of the participants were promoted to either electronic technician or process technician positions in the company. All placements are done through a job posting process, and placement in technician positions was not guaranteed. Each program completer applied for an available position(s) and competed with others (non-participants) for the position(s). The average salary increase after program completion was approximately $2.00 per hour from $8.25 per hour as an assembly line worker to $10.00 per hour as a starting technician. In addition to the promotion from the assembly line to a professional level position with resulting raise in salary, the participants have an increased understanding and appreciation for the role of education and training in their lives. The support group of the participants has continued after the program was completed. Through the counseling and instructional approach, the project fostered a network of employees that helped one another in classes and supported one another throughout the program and into their new professional level jobs.

Weaknesses: The weaknesses of the program center on a number of factors. First it is difficult to find companies that are willing to invest the time, money, and facilities that are necessary for the successful operation of this type of program. Second, it is difficult to find part-time electronics faculty to teach in a day-time program. Most electronics faculty come from the industry and it is difficult to find persons who can work during the day because they often hold down a full-time job in the industry. Finally, it is difficult for some workers to complete all courses in one year and digest and absorb all the information and skills being taught.

Overcoming Barriers: This model project has been successful at overcoming a wide array of barriers. Because all participant costs are covered by the company and salaries are maintained, employees do not suffer any financial burden. By offering the program on a full-time basis at the worksite to employees who are on payroll, the time factor is overcome as a barrier. Job responsibilities are eliminated (but not salary) while the participants are part of the program so this does not act as a barrier. The tutorials, support group, and counseling help participants overcome any lack of confidence they may have. Because all courses are offered during regular work hours there are no scheduling problems. The short-duration and concentration may remain a problem for some participants. All courses are relevant to the jobs being prepared for and the length of the program allows participants to complete it in one year. The one-year duration, however, may be too intense for some participants. Information on the program and counseling are provided to all participants so these are no longer problems.

The Intensive In-Plant Technician Training Model offers an example of a training program that has adapted to the needs of an industry and a specific group of employees who could not otherwise participate in such a program. This program offers training to a population group which does not seem to be adequately served by the more traditional adult education and training institutions discussed in Section II of this paper, a population group which would be considered the "have nots" in the analysis of patterns of participation that was presented in Section III. It is a program that offers opportunity for upward mobility and a college degree for a population of low skilled, low educated minorities and women.

2. Grass Roots Computer Literacy for Rural Adults Project

Program Operator: University of Idaho Cooperative Extension.

Program Goals: The Grass Roots Computer Literacy for Rural Adults Project, started in the fall of 1983, has two goals: The first is to design, test, and evaluate a curriculum to teach computer literacy to rural adults. By computer literacy, the project means the ability to understand simple computers and to be able to use mini and micro computers in work or home settings. The project recognizes that a number of factors are affecting rural adults including: 1) rapid automation of extractive industries (farming, lumbering, mining) has created a situation of structural unemployment in rural communities; 2) job opportunities in many areas require computer skills that rural adults lack; and 3) existing computer training programs do not recognize that adult learners need to acquire readiness skills before they can become computer literate. An increasing number of jobs in the rural communities of Idaho are requiring basic computer literacy skills. Computerized lumber mills are being built and bookkeeping for farming is relying on computers to an increasing extent. The rural banking industry as well as local government and county extension also are using computers to a growing extent. Finally, more and more small businesses in these rural areas are using computers for the delivery of goods and services. Through advisory groups consisting of community people, small business people, farmers, and homemakers, the project concluded that there is a dramatic increase in the number of jobs requiring computers and a dearth of training opportunities available to rural adults for computer literacy.

The second goal is to develop a delivery system that is appropriate for teaching in rural communities. In delivering the curriculum the project recognized the necessity of incorporating rural values and exeriences.

Barriers Addressed: This project focuses on a number of situational and structural barriers.

SITUATIONAL: Costs - there are no costs to the participants in the program. These are covered through a grant to the University from the Fund for the Improvement of Postsecondary Education; Time - courses are offered in the evening at high schools in the rural communities; Home responsibilities - courses are offered at times when participants can attend. Also courses last for four weeks (two evenings per week) which makes attendance easier.

SOCIAL-PSYCHOLOGICAL: Lack of confidence - courses are designed to build self esteem. Outreach efforts focus on local needs and face-to-face interactions.

STRUCTURAL BARRIERS: Course scheduling - classes are offered in four-week blocks two evenings per week to coincide with work and home schedules; Location - all classes are offered in local school district high schools; Lack of relevant courses - all courses are related to introduction to computers and computer applications; Length of program - the program is of short duration focusing solely on computer literacy; Lack of information - local persons are informed about the program through cooperative extension and other information sources that are relevant to rural adults.

Client Group Served: The program is aimed at adults in rural communities who have not had the opportunity for computer training through existing extension or adult basic education programs. The majority of the participants served by the program are rural women, less than half of whom are displaced homeworkers. Three of the initial group are farm women. The first course offering (Summer, 1984) had an enrollment of 24 individuals in two classes.

Training and Services Provided: The eight session (two nights per week) course covers introduction to computers and computer literacy. A math readiness component is included which covers math concepts, problem solving, and manipulation skills. A language readiness curriculum is available that focuses on logical thinking and the communication skills involved in information processing.

Referral services also are available to participants. These services include information on specialists in particular job or service areas (farming, lumber, banking, etc.). Information on job training (more advanced) also is made available to participants.

Pedogogical Approach: A cooperative community based system of delivery has been developed for the program. The system involves participation by community people, small business persons, farmers, and homemakers in the delivery of the program to rural adults. The curricula developed by the project recognize the value and importance of rural life and use them in developing course content. The program conforms to the schedules and practices of rural family and community life. The project recognizes the need to build self esteem as an aid to learning and uses the skill building activities to increase basic skill levels and self confidence. The courses are designed with two principles in mind. First, adults learn better by doing than by seeing or listening and instruction allows for practice and hands-on experience. Second, interaction among peers is an effective context for learning. Participants are encouraged to share feelings and successes by teaching each other and by encouraging and facilitating ideas to be exchanged. The courses are delivered by a network of supervised peer teachers. These peer teachers are selected by local advisory committees and trained by project staff to recruit students and teach the course. Classes are kept small (12 per class) to allow for group interaction and discussion.

Access to computers has been easier than anticipated. The project has access to the computers in the school districts and the University's extension computer system. Participants are learning on Apples, Commodores, and Radio Shack micro computers.

Program Impact: All of the program participants have become computer literate. The program is not yet completed so placement rates (in jobs) are not available. While still in its early stages, the project not only has helped adult women to become computer literate but also has helped them improve their basic math and literacy skills. In addition, the project has helped these women understand the role that the computer can play in their lives and in their communities. The delivery system with its peer teaching also has been well received by participants in the project.

Project costs have run approximately $120,000 per year including course development, peer teacher training, outreach, and delivery. While rural adults in Idaho are able to gain clerical skills through other extension courses, there have been no programs in computer literacy available to this population. This computer literacy project is a first step for rural adults who may seek additional vocational training on jobs that require computer skills.

Program Weaknesses: The program has a number of small weaknesses. The first centers on the lack of availability of relevant computer soft-ware. While computers are available, software that is relevant to the lives and jobs of rural adults have been hard to find. These have to be developed by the project itself. A second potential weakness is the transportability of the program. Because the project is being developed for a specific population of rural adults in Idaho, it may be difficult to transport it to other settings. A final weakness which is also a strength of the project is the heavy reliance on local people in the planning and delivery of the project. While this involvement gives ownership to the local community and encourages participation, it has caused the development to be slower than anticipated. The need to include local people takes time both in terms of scheduling and in explaining components, delivery strategies, and course content. The time has been worthwhile, however, in terms of participation and program success as determined by the barriers to participation that have been overcome by the project.

Overcoming Barriers: A wide array of barriers to participation by rural adults have been addressed by the project. Because there are no costs to participants, this barrier has been overcome. The time factor has been handled by offering classes in the early evening in local high schools and by offering the courses in eight sessions over a four-week period. This has also helped participants maintain their home responsibilities because the classes do not require participants to spend a great deal of time away from home.

The project is sensitive to the self esteem and lack of confidence problems faced by rural adults and builds self esteem as an aid to learning through the use of skill building activities and peer teachers. Scheduling is not a problem because classes are offered twice a week for four weeks in the early evening when these people are free to take classes. The classes all focus on one topic (computer literacy) and are made relevant by using rural values and lifestyles as the vehicle for course content. While still small in terms of numbers of rural adults served, the project has been well received and interest is growing.

3. Postsecondary Adult Literacy Education Project

Program Operator: Center for Adult Education, West Virginia Institute of Technology.

Program Goals: The primary goal of this program is to teach basic literacy skills to adults who are functionally illiterate despite the fact they have high school diplomas. Many adults in West Virginia are unable to understand union contracts, college registration forms, contract negotiations, or local newspaper articles and are unable to write short, simple articles for newsletters. They lack basic reading, writing, and literacy skills even through they have completed a high school education. The Postsecondary Education Adult Literacy Project, which began in the Fall of 1983, is aimed at teaching these skills through a Language Experience Approach that uses materials that are relevant to the individual (union contract, welfare regulations, or newsletters) as the text or courseware for literacy training. Unlike many other adult projects, this one is based on the belief that the issue or message is what drives the worker or adult to learn to read or write. Rather than literacy for literacy's sake, the project empowers people by providing literacy skills and training for their own goals in their communities and workplaces. The project relies on "adult adjuncts" and "peer pairing" to deliver the program which is offered in rural communities, at union halls, and in prisons. The curriculum is experiential and learner-generated and the method of instruction relies on the issues as the delivery force behind the desire to learn.

Barriers Addressed: This project addresses a number of specific situational, social-psychological, and structural barriers.

SITUATIONAL: Costs - there are no costs to participants. All costs are covered by a grant to the Institute from the Fund for the Improvement of Postsecondary Education and other state sources; Time - courses are of short duration and are offered at convenient times for participants; Prior education - the courses are geared to the functionally illiterate adult and recruitment is done locally through organizations the participants are part of; Occupational status - many of the participants are unemployed or laid-off union workers and the program is specifically geared to their needs, both educational and day-to-day.

SOCIAL-PSYCHOLOGICAL: Lack of confidence - course content is community or work based and reflects the individual needs of participants for literacy and information; Low-self-concept - participants are learning literacy skills through materials that they are familiar with and understand.

STRUCTURAL: Course scheduling - classes are scheduled at times that are convenient to participants and are of short duration; Location - courses are offered in the local community at union halls, prisons, or in community organizations; Lack of relevant courses - courses are all related to basic literacy and use relevant materials to generate course content; Lack of information - information on courses is made available through community groups that participants are part of; Inadequate counseling - counseling is built into the program.

Client Group Served: The program is aimed at adults from organized labor, prisons, and community organizations who have high school diplomas but who are nonetheless functionally illiterate. Almost 200 adults participated in the program in its first year. These adults are not served by traditional GED programs because they are already high school graduates and the voluntary adult literacy programs are only in the larger cities in the state. These literacy efforts do not reach the rural communities where most West Virginians live. This literacy program is therefore filling a gap for a population of adults that has not been adequately served by other literacy efforts. Most of the participants are in a state of flux. They are unemployed and no longer part of a union. Most of the male participants are former United Mine Workers of America members while the female participants come from textile and other unions or have not been employed for long periods of time.

Training and Services Provided: All courses are in basic literacy and meet once a week for four to five weeks for three hours. Basic reading, writing, and literacy are taught using materials that are relevant to the daily lives of the participants. These materials include: manuals, welfare department regulations, union contracts, organizational newsletters, welfare guides, local newspapers, and court decisions. In addition, creative writing is used as a tool for literacy training for certain groups of participants, most notably prisoners. The course curricula are generated by the participants, based on their interests and needs. The faculty use these "daily-use" materials to teach the literacy skills to participants.

Counseling also is provided to those participants who enter the "ladder program." The ladder program moves people from these adult literacy courses into a Board of Regents degree program which grants credit for prior life experiences. The counseling helps some of the participants to put together a personal portfolio of their lives which is evaluated for credit toward a degree. These individuals can then take credit courses in the Labor School to complete their degree requirements. The Ladder program helps people climb from these non-credit literacy courses into a degree program that recognizes life experiences for credit toward the degree.

All courses that are part of the adult literacy program are offered off-campus in union halls, prisons, and community organizations (welfare department, clubs, or associations). All of these courses are free to participants with the program costing about $90,000 annually for staff, materials, and operations.

All of the courses are sponsored by a union, community group, or prison. There has been no industry participation to date.

Pedogogical Approach: A Language Experience Approach which uses learner generated materials is used by program staff. A topic is approached with a variety of activities addressing the specific literacy skills of phonetic analysis, word recognition, and comprehension. Some of these activities include dictation of experiences, translation of key documents, and creative writing. The use of adult adjuncts and peer pairing is also part of the program. Adult adjuncts are former participants or staff of the organizations (unions, prisons, community groups) who are trained in the methods used so that they can continue the program after the project funding has run out. Peer pairing is a teaching technique which pairs individuals together to reinforce learning, help the teaching-learning process, and provide support for participants.

Program Impact: Program participants have become functionally literate and are able to use their skills in their daily lives. Participants are better able to read and understand newspapers, contracts, rules and regulations, policies, and manuals. They are better union workers, workers (when they can find jobs), and members of their communities. Because of the economic conditions in the state, there has been little impact on the employment outcomes for participants. They are, however, better prepared if new jobs do emerge in the local economy.

Weaknesses: The program has a number of weaknesses, most of which are externally caused. First, because of local economic conditions (high unemployment), linkages with organizations (unions, community groups) have been a problem. These organizations are concerned with other issues that are more critical to the day-to-day existence of these adults than is literacy, issues such as jobs, food, housing, and state economic development.

Second, the levels of the materials used in the classes are often very advanced (court rulings, manuals, regulations) and translation has been very time consuming and difficult. Third, funding for the program is not continuous and this has caused problems of continuity and lost momentum. There does not seem to be an interest in or commitment from state authorities to adult education and training and no long term plan for illiterate adults exists. This has caused many problems for the program and has limited its potential impact.

Overcoming Barriers: This literacy program has helped overcome many barriers for its participants. Because all courses are free, cost is not a factor and because courses are offered in local areas at convenient times, scheduling and location have been eliminated as barriers. The use of relevant materials and the language experience approach have helped to overcome barriers related to lack of confidence and prior education. The courses are all relevant to the participants because they teach literacy through materials and issues that are related to the daily lives of the participants. The approach to teaching literacy skills combined with the delivery of the program through local community organizations has resulted in overcoming barriers to participation in the literacy program for adults who would otherwise not be served by the existing adult education system.

4. Cascade Business Development Center

Program Operator: Portland Community College (OR).

Program Goals: The Cascade Business Development Center (CBDC) is a small business incubator model developed through a consortium of business, education, and government. The CBDC provides multiple services to small business entrepreneurs. In addition to an innovative curriculum in small business skills, the CBDC provides inexpensive rental space and office and support services. The goal is to train small business entrepreneurs and to assist them in developing their own small businesses. A second goal of the CBDC is to improve the economic conditions of the North/Northeast section of Portland, Oregon through the development of a number of new, viable small businesses. The Incubator provides office and industrial space at below market rates as well as other support and educational services to new and fledgling businesses. Some of the services offered to the Incubator tenants include: secretarial assistance, computer services, accounting and payroll services, telephone answering services, legal and insurance consultation, janitorial and security services, and a management development training plan, based on the specific needs of the business.

The Incubator project has been a consortium effort of the City of Portland Private Industry Council, Portland Community College, and the City of Portland's Economic Development Commission representing business, education, and government, respectively.

Barriers Addressed: This project addresses a set of barriers associated with learning a new business and setting up such a business.

SITUATIONAL: Costs - associated with learning small business skills and starting a small business are covered by the project; Time - participants operate their businesses as they are learning small business skills; Job responsibilities - participants are learning skills as they perform the duties associated with small business operation.

STRUCTURAL: Course scheduling and location - all courses are offered at the CBDC through individualized programs which are geared to the specific needs of participants; Lack of relevant courses - all courses use management techniques that are geared to small business operation and are relevant to the specific needs of the small business participants; Length of program - the courses are of an "as needed" length. The skills taught are related to needs and the length is not pre-determined by the curriculum; Lack of information and counseling - each participant has an advisor team (successful small business persons in same or similar area) who provide information and personal counseling.

Client Group Served: The program is for fledgling small business operations and potential small business operators.

Training and Services Provided: Course content, developed by the consortium, uses management techniques to teach basic small business skills. The curriculum is flexible and instruction is individualized to the needs of the small business entrepreneur with all courses and services delivered at CBDC. Individual agreements between the CBDC and the small business entrepreneur are drawn up and include the following:

- a management development plan covering the growth and development of the business itself and the development of the entrepreneur's skill and management responsibilities through a combination of education and professional assistance and guidance;
- relocation assistance; and
- access to low cost college research, laboratories, and student worker assistance.

The small businesses entrepreneurs learn small business skills through the operation of their own small businesses. Through the individualized education and business plan and a business advisory committee (for each business), the entrepreneurs learn the skills necessary for successful small business operation.

The instructional program is divided into four distinct kinds of activities:

- Small group instruction.
- Individual instruction by the Director of the Project.
- Individual instruction by the Advisory Committee for the business.
- Business technology instruction.

Small group instruction is used to address common problems among all or related groups of businesses. The group discussions help develop group support among participants and the confidence of individuals in the program. Individual instruction takes place almost daily with the Director pointing out good management and decision-making procedures in situations as they arise. The Director serves in the capacity of an information bank to assist management as the need arises.

Individual instruction by the Advisory Committee of its individual members takes place both by design and on an on-call basis. The designed part is formulated by the Advisory Board and the business during quarterly reviews of the business' progress. The on-call portion is by agreement with individual Advisory Board members relating to their specific areas of expertise, i.e., banking, insurance, marketing.

Business technology instruction takes place when the Director of the Project and the Advisory Board have determined a need for in-depth instruction in special areas, i.e., advertising, accounting, personnel management. These courses are available through the regular campus offerings in the Business Department and are delivered at the CBDC.

In addition to the four specific types of instruction above, the expertise of the faculty of the college is also available for consultation in specific areas, i.e., production, marketing, shipping.

Each of the instructional formats listed above is coordinated to focus on a given set of topics each year that the business is in the Incubator. The following topics are covered during the three year period:

YEAR ONE

- Small Business Management
- Bookkeeping - Records
- Balance Sheet - Profit and Loss Statements
- Inventory Control
- Cash Flow and Projected Cash Flow
- Personnel Records and Reports
- Marketing
- Depreciation
- Income Tax Management
- End-of-Year Records
- Legal Impact on a Small Business

YEAR TWO

- Yearly Business Analysis
- Projection Break-even Analysis
- Financial Statements
- Insurance and Risk Management
- Merchandising, Advertising and Promotion
- Budgeting and Forecasting
- Increasing the Effectiveness of Tax Planning
- Protection from Inflation and Taxes
- Techniques in Evaluating a Small Business

YEAR THREE

- The Business Plan
- Determining the Most Profitable Levels of Operation
- Pricing Strategies
- Using Computer and Computer Analysis
- Managing Your Assets
- Selecting a Site for Relocation

As special needs are identified among the participant entrepreneurs, instruction in management function support topics is given. Such topics include special problems faced by women and minorities, confidence building, assertiveness training, decision making skills, motivational concepts, interpersonal relationships, and human resource management.

As students of the college, the entrepreneurs are entitled to the full cadre of student and instructional services it offers; and since the Center is located on the Cascade Campus, available services located within two or three blocks of the Center include:

- personal and family counseling;
- skill and aptitude testing;
- group medical insurance;
- emergency medical technician service;
- a drop-in tutor center;
- a library affiliated with the Washington Library Network providing access to the three million volumes of the University of Washington and other Northwest colleges and universities;
- athletic facilities;
- food services; and
- cultural events including music, plays, dance and lectures.

During the third year of a business' stay in the Incubator, it will prepare to move out into an unsubsidized operation. The Portland Development Commission will aid in the relocation of the businesses and will attempt to place these businesses in the North/Northeast neighborhood.

Pedogogical Approach: A combination of individualized and small group instruction is used in the CBDC. Courses are very concentrated and focus on small business management rather than adult basic education skills. The project feels that such an approach is more likely to lead to success than one which adds small business training (theory) to an adult basic education curriculum. "Hands-on" "learning as you operate your business" approach is the strategy used by the project.

Program Impact and Barriers Overcome: The CBDC has attracted a number of small business entrepreneurs during its early stages of operation. These individuals will be using the CBDC to learn and operate their own small businesses. The major obstacles of costs associated with obtaining a small business and learning small businesses skills have been overcome by the project. The low rentals and low costs of assistance combined with the "no cost" instruction and guidance have made the CBDC a viable option for a number of small businesses.

Weaknesses: While costs to individual small business entrepreneurs are minimal, the costs of the overall program are rather high in terms of overall space, staffing, support services, and supplies/materials. Other weaknesses may emerge as the program goes into full operation and as businesses leave the CBDC after three years of closely supervised (and assisted) operation.

5. The UAW-General Motors Joint Skill Development and Training Program and the UAW-Ford Employee Development and Training Program

These two national programs are similar in nature and are described together.[7]

Program Operation: These are both joint UAW-Company programs supported by a five cent (Nickel-fund) per hour per employee contribution that was negotiated as part of the 1982 collective bargaining agreements between the UAW on the one-hand, and Ford and General Motors on the other.

Program Goals: The UAW-GM program goals are as follows:

- Arranging for or providing training, retraining, and development assistance for employees displaced by new technologies, new production techniques, shifts in customer product preference, facility closing, or discontinuance of operations.
- As an initial priority, reviewing skilled trades employees' training in new technology, including robotics.
- Developing and providing training to enhance skills for present and anticipated job responsibilities and to meet new technology.

The new Joint Skill Development and Training Program is directed by equal numbers of representatives of the union and the corporation. Over $40 million a year has been earmarked for helping laid-off GM workers get back into the work force, through retraining for new careers or job search assistance and counseling. The funding grew out of 1982 labor negotiations with the United Auto Workers and is significiantly aided by existing state and federal funds. The UAW-Ford program has the following objectives:

- Arranging for career counseling, retraining, job search training, and placement assistance for laid-off employees.
- Assist in designing and obtaining appropriate career counseling, training, retraining, and personal development for active employees.
- Support local and national UAW-Ford employee involvement efforts and other joint activities.
- Provide opportunities for the exchange of ideas and innovations with respect to employee development and training needs.

The Employee Development and Training Program focuses on the employee. The thrust is to expand the principles of involvement to those of caring--"caring about careers, personal plans, and human progress." The program itself is being developed and applied along participative lines: local committees, employee voluntarism, local program flexibility and autonomy, and national support. Further, the program extends into the community, creating working consortiums with educational, social, and governmental bodies.

Program features are coordinated by the UAW-Ford National Development and Training Center. The center is directed and guided by a joint governing body consisting of an equal number of company and UAW representatives.

The center concentrates on planning, design, and coordination functions. It provides on-site assistance to local managements and unions to help them design and implement local program application. It principally relies on existing community educational and counseling resources, and uses their faculties and curricula to provide specific training and development programs. The center is building a participative program delivery network linking local managements, local unions, and educational and community resources throughout the country.

Funding totals more than $10 million a year for the program, and the center and its activities are funded under the collective bargaining agreement at five cents per hour worked, with expenditures authorized and approved by the center's joint governing body. Like the UAW-GM program, funding has been supplemented by state and federal training funds.

Barriers Addressed: Both programs address the wide array of barriers faced by adults who have been or may be laid-off from their jobs after long periods of employment.

SITUATIONAL: Costs - for the participants are covered by the program including costs for retraining, counseling, job search, placement, and transportation. Other barriers are addressed through the local programs that are developed as part of the larger national efforts.

Client Group Served: The program is for laid-off and present auto workers of GM and Ford. The program is available to all GM and Ford UAW members both active and laid-off. To date local programs have focused on California and Michigan where large numbers of auto workers have been laid-off.

Training and Services Provided: A wide array of training and services are available through these programs including:

- Registration. Experience, skills, interests, aspirations, and goals are identified.
- Retraining assessment. In-depth counseling, a test to determine the approximate grade level of learning ability, and, if appropriate, an aptitude test.
- Support services. Personal or family counseling, health, vocational rehabilitation, and transportation.
- Job search assistance and placement. Job development, referral, and placement, job search workshops.
- Retraining. Retraining plans, employee-based training, classroom training, unemployment benefits.
- National Vocational Retraining Assistance Plan. A prepaid tuition assistance plan for certain laid-off employees; covers tuition and certain fees up to $1,000 per year for up to four years, depending on seniority, for self-selected education and training.
- Targeted vocational training projects. Specially designed, full-time technical or skills-oriented training for laid-off employees focuses on areas identified as having job prospects or representing future job growth markets.
- Career counseling and guidance. Assists both active and laid-off employees in forming and achieving their personal and career goals; contains four main components: self-awareness, career awareness, career decision making, and career planning; six joint local committees have initiated counseling and guidance for laid-off employees; the national center has assisted in assessing providers' qualifications and establishing local programs for nine locations covering more than nine hundred participants.
- Job search skills training. Provides laid-off employees with self-directed job-hunting skills and professional job search assistance; this supplements basic state employment service and employment search orientation sessions; training includes provision of labor market information and development of job-seeking support systems, resumes, and interviewing skills; training is conducted by outside providers,

generally from the academic community; varies from about a week or more; longer workshops include "job club" techniques at four locations.

- *Special national center assistance for facility closings*. On-site consultation and help in liaison with government agencies and community resources; pursuit and procurement of state and federal funding to augment program-sponsored employee development training activities; evaluation and assessment of local needs through vocational interests and related survey services; career counseling and guidance activities aimed at assessing employees' interests, aptitudes, basic skills and attitudes; providing career and labor market information; and enhancing decision-making skills to ease transition to retraining and/or other employment; basic academic brush-up courses under program sponsorship offered by local education and training providers; formal vocational retraining programs, consistent with employee interest and labor market conditions, under sponsorship of the joint program and other funding from external sources; job search skills training supported by the UAW-Ford program and state funds; job placement assistance.

Program Impact: Both programs are in their early stages of operation but some data on impact do exist. The following tables reflect the activities of the UAW-GM and the UAW-Ford projects through June 1983.

UAW-GM JOINT SKILL DEVELOPMENT AND TRAINING PROGRAM

Activity	Number of Times Service Provided
Registration	8,341
Entered Employment	1,456
Placements	664
Obtained Employment	792
Job Development Contacts	2,881
Promotional Employer Contacts	17,312
Job Search Training Workshops	236
Number of Participants	1,882
Referred to Training	2,906
Enrolled in Training	2,271
Referred to Supportive Services	2,227
Employment Counseling Interviews	3,550
Financial Counseling	251
Job Orders Obtained	1,077
Job Referrals	5,287

UAW-FORD TRAINING PROJECT ACTIVITIES

Activity	Number of Times Activity Provided
Vocational Assistance	2,100
Targeted Vocational Training:	
Locations	41
Individuals	330
Vocational Plans and Interest Surveys:	
Locations	16
Individuals	6,300
Career Counseling:	
Locations	9
Individuals	982
Job Search Skills Training:	
Laid-off individuals	800

Weaknesses: Reemployment of those in the two programs at this time is inconclusive. However, in both GM and Ford programs, many of the gains of employment do not appear to result from retraining, but rather from the program's counseling and job search advice. Retraining alone does not have a significantly greater impact on reeemployment rates than job search assistance.

An economy with an unemployment rate of 8-10% is a poor laboratory for testing the idea of recycling blue collar workers. There have been enough success stories to provide some basis for optimism, and some experts agree that even a handful of successful conversions of ex-industrial workers makes it all worthwhile. But even its advocates acknowledge that retraining has limited potential.

It may be too early in these programs to say that these are conclusive results, but training programs must be all-inclusive, with a great deal of emphasis on counseling and guidance, as well as financial support systems being made available while in training. And such support systems are an absolute necessity for adult workers involved in training programs. Workers who are unemployed and, in most cases, without income of any type need transportation costs, child care, legal and financial counseling, and subsistence to be able to take full advantage of training.

Overcoming Barriers: The UAW-GM and UAW-Ford programs have been successful at overcoming a wide array of barriers. Both programs recognize the need for a diverse set of services in addition to any retraining that takes place. By offering counseling, job search, and job placement assistance along with retraining opportunities these programs are addressing the very factors that act as barriers for adult workers. In addition, the tuition assistance component of the program helps the participants pay costs associated with educational programs (up to $1,000) and by combining their tuition benefits with other state and federal efforts, some adults are able to collect unemployment insurance while participating in the retraining or other components of these programs.

By recognizing the need of laid-off workers for a set of diverse services in addition to retraining, these two programs have recognized the critical factors that act as barriers to adult participation in education and training. The ultimate success of these programs in terms of retraining and new placements will not be determined by the program elements themselves but by the nation's economy and the ability of the participating auto workers to drastically alter their lifestyles and their careers. Because the program has all of the "right" pieces will not necessarily guarantee success. While the barriers to participation may be overcome, the ultimate impact may be determined by factors well beyond the program's control or focus.

B. Common Themes

While the problems addressed and approaches developed by each of the programs reviewed above differ, there are a number of themes that run across these education and/or training efforts. First, most of these programs are responding to a problem or set of problems that are a result of changes in the economy and were developed in response to an emergency situation. For some, the situation is large numbers of displaced workers or workers in need of skill retraining. For others, it is the need for skill upgrading. Some programs are responding to the needs of adults who lack basic skills while others are responding to the need for increasing the skills of employees within an industry or work setting.

Second, the population being served by these programs are adults who are or have been in the workplace. For a number of the institutions it is the first time they are dealing with a population of learners who are mature, experienced, and are looking for programs that are responsive to their needs for training, jobs, and self improvement. This has resulted in the curriculum, pedagogical, and delivery changes that were necessary (and detailed under the program descriptions) to serve this population of adults.

Third, each of these projects is built on some form of partnership or collaboration among education, business, organized labor, local government, and/or community organizations. At its most basic level the partnership involves a single educational institution working with a single business, group of adults, or labor organization. At its most advanced level the collaboration involves multiple organizations working together to solve a problem.

Finally, most of these programs are "marginal" or "fringe" efforts. That is, they are either not part of a traditional education institution or they are housed in offices or centers that are not part of the mainstream within an institution. They also usually operate in whole or in part on soft monies and as such are dependent on the priorities and policies of other institutions and organizations. For many groups of adult learners, it would seem that the existing institutions have not adequately served their needs. The demographic patterns detailed in Section III point out how many groups are not served by the existing adult education and training system, and the programs reviewed all grow out of a need for special services, programs, or strategies to meet the needs of selected groups of adults.

While the commonalities of these programs are important to understand, the power of these program examples rests in their ability to suggest successful strategies for preparing adults for job and career transitions and for responding to the barriers and problems that they may face in the transition process.

C. Critical Program Elements

What are the criticial elements of education and training programs that have sucessfully overcome barriers for preparing adults for new jobs and careers? Which elements respond best to which barriers to participation in education and training programs? To answer these questions, a matrix is developed which presents the elements that best respond to major barriers. In some cases an element may respond to only one barrier while in other cases an element may span several barriers. The major barriers that will be examined include: financial, time, prior educational attainment, self concept, scheduling, location, information, and counseling.

Critical Program Elements for Overcoming Barriers to Adult Participation in Education and Training Programs

Barriers	Critical Elements
Financial	• Miminal costs to participants • Unemployment compensation not affected by participation • Employers finance training and skill upgrading • Government pays for programs • Use of tuition assistance for employees • Support services covered by program costs
Time	• Programs at the workplace • Weekend and after workhours programs • Short courses, symposia, and workshops • Use of computers and other teaching technologies • Paid educational leave or flexible work scheduling • Support services in the commumity or at the workplace
Prior Educational Attainment	• Remedial programs and tutoring • Programs in congenial settings such as the workplace or community • Short courses or workshops that are non-threatening • Peer teachers (when appropriate) • Sensitive instructors • Pragmatic and relevant programs and materials • Active participation by learner (hands-on or experience-based) • Feedback and encouragement on a continuous basis

Self-Concept	● Peer support groups ● Counseling ● Courses or services that are geared to succeeding ● Sensitive instructors ● Peer teachers ● Pragmatic and relevant programs and materials ● Feedback and encouragement ● Programs in congenial settings ● Remedial programs and tutoring
Scheduling	● Flexible curriculum ● Programs at the workplace ● Weekend and after workhours programs ● Short courses ● Open entry-open exit programs ● Modular curriculum ● Computer and other teaching technologies ● Programs in community settings
Location	● Programs at worksites ● Programs in the community ● Provision of transportation to education/training facilities
Information	● Job search workshops ● Job clubs ● Training on how to collect and use information ● Local labor market information ● Information on education and training institutions ● Counseling
Counseling	● At the workplace ● In the community ● Peer counseling ● Peer support groups ● Free, as part of all programs

General	• Joint programs of business, education, labor, local government, and community agencies • Classroom and experiential learning options available • Comprehensive approaches that combine training and support services • Programs that are offered before lay-offs • Retraining programs for new or emerging jobs

The number of adults participating in education and training programs has increased from 1957 to 1981 in response to changes in the workplace, the economy, and the society. At the same time, however, many of the groups of adults most in need of this education and training are non-participants. The success of future efforts to serve those most in need is dependent on two interdependent factors. First, the program must respond to the needs of the adult participants for skills, jobs, or services. Second, the program must respond to those barriers to participation in education and training faced by adults. The critical elements that make for successful programs can be summarized as follows:

- Partnership or collaboration among business, education, organized labor, local government, and community agencies
- Flexible curricula and scheduling
- Relevant and pragmatic courses or programs
- Active participation by learner in the learning process through hands-on experiences or curricula adapted to personal or community interests
- Availability of support services
- Education or training in congenial environments (workplace, community)
- Classroom instruction combined with hand-on experience
- Low or no cost to participants
- Sensitive instructors (peer or others)

- Remedial skills training available
- Training for new or emerging jobs
- Peer support groups

If programs are to be responsive to the needs of adults preparing for job and career transitions, they need to consider each of these elements in light of the population of adults to be served. The background and characteristics of the population will, in large part, determine the specifics for each of these critical elements. Programs for laid-off auto workers should be different from a program for rural farmers or female minority assembly line workers. Adapting or adopting these elements to the needs of the population is essential to improving the access and opportunities for education and training for adults preparing for new jobs or careers.

V. SUMMARY AND RECOMMENDATIONS

In this paper we have outlined the array of education and training opportunities available to adults, detailed the patterns of participation in adult education, examined the reasons for and barriers to participation by adults, and assessed the effectiveness of education and training programs in overcoming barriers to participation in programs that prepare adults for job and career transitions. The picture that emerges is best described as a mixed bag. On the one hand, there is a growing number of adults participating in a wide array of education and training programs and many of these programs seem to be effective (based on numbers of participants). On the other hand, the demographic patterns of participation suggest an increasing trend of elitism in adult education and training, factors that act as barriers to participation reinforce these patterns, and as a result many programs are not reaching large numbers of adults who are faced with career transitions. After briefly summarizing our findings, a set of recommendations and conclusions is drawn.

A. Summary

A number of questions have guided this paper. We summarize the findings under each of these questions.

1. What is the structure of adult education and training opportunity?

    - Over two million adults participate in programs provided by elementary and secondary schools.
    - Postsecondary schools, including noncollegiate postsecondary schools, two-year colleges, and four-year colleges account for almost 8.5 million adult participants.
    - Almost four and one-half million adults participate in private employer provided programs.
    - Government agencies (federal civilian, Postal Service, Armed Services, and State and local governments) account for almost four and one-half million adult participants.

- Almost one and one-half million adults participate in programs offered by unions and professional associations.

- Over one million adults take private instruction.

- Community organizations (Y's, churches, scouts, etc.) provide education and training programs to 11 million adults.

2. What are the patterns of participation in adult education and training and what are the reasons for these patterns?

- Adults between 25 and 44 years old participate at higher rates than younger or older adults.

- Blacks and Hispanics participate at lower rates than Whites.

- Participation rates for females have increased over the past decade and are now higher than the rates for males.

- Prior educational attainment is the factor most closely related to participation. With every increment in education, participation increases. Over one in four adults with a college education or more participated in adult education in 1981.

- Employed adults are more likely to participate than are unemployed adults or adults keeping house.

- Income is strongly related to participation. For each increment in income level, there is a marked increase in participation rates.

- Adults in professional/technical occupations participate at the highest rates while operatives, laborers, and farmers have the lowest rates of participation.

- Most adults participate for job or career reasons, most often to advance in a job.

- A relatively large proportion of adults participate for personal or social reasons.

- The highest percent of courses taken are business, health care, and engineering.

- By far the highest proportion of adults take courses for other than educational credit or licensure reasons.

- Males are more likely than females to take courses for job or career related reasons, while a higher proportion of women participate for personal or social reasons.

- Blacks and Whites are somewhat more likely than Hispanics to participate for job or career reasons.

- Adults 25-54 years old participate for job or career reasons at higher rates than do younger or older adults.

- Employed adults are more likely than unemployed adults to take courses for job or career reasons.

- Situational factors (costs, time, age, educational level) are most often cited as barriers to participation. Cost factors are problems for women, younger adults, Blacks, and those with less education, while time is a problem for men, Whites, middle-aged adults, and those with higher levels of education.

- Social-psychological factors (lack of confidence, lack of interest, lack of support from others) are barriers for a small portion of adults.

- Structural factors (scheduling, location, information, counseling) act as barriers for a fairly large proportion of adults.

3. What are the critical elements that lead to program effectiveness in overcoming barriers to participation?

   - Partnership or collaboration among business, education, organized labor, and/or community agencies.

   - Flexible curricula and scheduling.

   - Relevant and pragmatic courses.

   - Active participation by learners.

   - Availability of support services.

   - Workplace or community environment.

   - Combination of modes of instruction-classroom, hands-on, lecture, and discussion.

   - Low or no costs to participants.

   - Instructors sensitive to adult needs, styles, and values.

   - Availability of remedial programs.

   - Peer support groups encouraged.

   - Training for new, emerging, or high demand jobs or careers.

   - Programs geared to needs and wants of the population being served.

- Increasing options and opportunities available to adults preparing for career transitions.

4. How do the structure of education and training opportunity and patterns of participation relate to program effectiveness?

These are clear limitations in the data available on program effectiveness. Outcome data in terms of employment, income, mobility, etc. has not been systematically collected by education and training institutions that serve adults. In addition most institutions do not report patterns of participation (by demographics) for their different adult programs. The lack of data makes any conclusions suggestive rather than firm.

Despite the wide availability of education and training programs for adults (as shown in Section II), the patterns of participation suggest large gaps in groups served. It seems that the very group most in need of education and training are those that are most affected by barriers to participation. The program examples that were reviewed in Section IV have undertaken specific strategies to overcome the barriers faced by those adults most in need of education and training. While these programs represent only a small sampling of the programs that are serving adults, they do suggest a set of strategies that other programs could follow to reach wider populations of adults. These strategies were discussed in Section IV. The actual reasons that the vast majority of other programs are not reaching those adults most in need are unclear because of a lack of a comprehensive data base on access and barriers to participation in adult education and training programs. It may be that the programs are perceived as not being relevant. This, however, may be do to a lack of information or lack of counseling. Or, it may be due to perceived costs. Here again there may be a problem of information and counseling.

Regardless of what factors account for the low participation of certain groups of adults, the institutions and system as a whole need to identify effective strategies for reaching out to adults and bringing them into their programs. The strategies outlined in the sample programs are a good starting point for future efforts. It seems clear that a basic tenet for any program is that it be comprehensive, not only providing opportunities for skill training or knowledge acquisition but counseling and other support services as well. A second basic element would seem to be the need for alternative pedogogical approaches to learning. The traditional lecture approach is not the most effective for all groups of adults particularly those who have had negative experiences with their education or training in the past. Finally, it seems the availability of a wide array of programs offered through many institutions is not generally known or understood by most adults. Better information on opportunities needs to get into the hands of a larger population of adults if they are expected to make good decisions about their participation in any of these programs.

B. Recommendations

In preparing this paper, the need for a better and more comprehensive data base broadly related to education and training for adults became clear. Therefore, we believe it appropriate to put forth a set of recommendations related to data needs.

Our first recommendation revolves around the general need for a better and more comprehensive data base broadly related to education and training for adults. Currently, there does not exist a single data base which examines patterns of participation in adult education and training; industry and union-sponsored education and training; reasons for participation; and barriers to participation. Such a data set on a large number of adults from all sectors of the workforce is clearly needed. Because of their growing numbers in the workforce and their unique sets of problems, care should be taken to include adequate representation of women and minorities in developing the sampling plan for such an effort. With such a data set, a more complete picture of the attitudes, plans, and behaviors of adults vis a vis education and training could be developed.

In planning such a study, thought should be given to adding a longitudinal component which would emphasize patterns of occupational mobility; attitudinal and behavioral change; and patterns of education and training. This type of longitudinal information could provide valuable insights on a) tracking patterns of adult participation, b) assessing the long-and short-term nature of barriers to participation, c) the impact of different education and training experiences on mobility, attitudes, and behavior, and d) the effect of institutional as well as local, state, and federal initiatives that have been developed to increase education and training opportunities for adults.

This information should be collected on a regular basis by the federal government. NCES could take the lead in this area by undertaking a comprehensive study of access, barriers, and outcomes of participation in adult education as part of their tri-annual study of adult participation. Such a study would cost 3-5 million dollars (similar to the cost for the National Assessment of Educational Progress) but the costs represent only a small fraction of the monies spent on adult education and training annually.

This National Assessment of Adult Education and Training should be a household study of adults, using census information for sampling and data collection. State comparisons as well as other analyses would provide valuable information for government policy workers and education and training decision-makers.

Related to this first recommendation is the need for alternative methods of data collection, particularly with regard to the measurement of barriers. The traditional survey approach suffers from what has been termed response bias due to social acceptability or unacceptability of certain responses. That is, the nature of the factor reported as a barrier may affect the responses by adults. Many situational factors may represent socially acceptable responses to "why a person does not participate in educational activities" while social-psychological factors may be less socially acceptable. Specifically, lack of time or money, which are situational factors, are more acceptable socially as reasons not to participate than would be lack of interest or lack of self confidence. In addition, some of the situational, social-psychological, and structural factors that are reported as barriers may ultimately be due to lack of information about the options that do exist. These problems suggest that alternative approaches are needed to better assess the social-psychological, situational, and structural reasons for nonparticipation by adults. Small scale studies with intensive interviews can be used to begin to better understand these problems. From this, new survey instruments can be developed which better assess the "real" reasons for nonparticipation by adult workers.

A third recommendation related to data needs is proposed. An inventory of adult education and training programs needs to be developed. This inventory should provide a detailed history of programs (goals, objectives, populations served, outcomes) as well as descriptions of training and services offered and pedagogical approaches. This inventory could be computerized so that information is readily accessible for those interested in developing their own programs or in learning about offerings available to them.

After a detailed inventory has been developed, case studies of a large number of these different adult education, training, industry-provided, union-sponsored, and support service programs should be undertaken. These case studies could help to identify and document those components that respond to the needs or eliminate barriers of different groups of adults. The case studies would uncover a number of critical factors which are related to access, barriers, and effectiveness of these programs. Decision-makers in educational institutions, business, or government can use the information from these case studies for the development of new programs or the modification of existing programs to enable them to better meet the needs of adults for education and training.

Our final recommendation focuses on the need for hard evaluation data on program outcomes. If possible, and the cost implications are recognized, all education and training programs for adults should evaluated. At a minimum, these evaluations should assess the short-range success of the program in meeting its stated goals and objectives. In doing so information should be collected on the following: exit and new entry wages; placement; skill acquisition or competencies; occupational status, roles, and responsibilities; support services; and modes of delivery. These evaluations should provide information on successful programs or program components that can be used in the development of new efforts to meet the needs of adults preparing for career transitions.

C. In Conclusion

In recent years, adult participation in education and training programs has been increasing. At the same time, opportunities for education and training through traditional education institutions, employer-provided programs, and other providers have been growing. Education and training for adults can affect the personal and career development of adults and can affect the nature and quality of the workplace and the society. If new education and training programs are to effectively prepare adults for career transitions they must become more responsive to the needs of those adults most impacted by lay-offs or displacements, or otherwise forced to change jobs or careers for mobility or self improvement reasons. That is, education and training programs need to become more responsive to the "have nots," who would otherwise be unable to respond to the job and career changes that they will face.

For the educational system to be responsive to the needs of adults preparing for job or career transitions, it must look beyond its traditional role of education of youth towards its emerging role in adult education and training. It must be responsive to the diverse needs of a diverse society. The adult education and training system cannot work alone; it must work collaboratively with business, labor, government, and other educational organizations (all types at all levels). The adult education and training system cannot offer limited options; it must offer a comprehensive set of services to individuals and organizations. And adult education and training cannot only be concerned with education; it must be equally concerned with learning, learning that empowers individuals and organizations to respond to and act on the changes that they will be facing in the future. Education and training institutions must recognize that "different strokes for different folks" is the "new" rule under which they must operate if they are to serve the needs of adults seeking further education and training for career changes.

FOOTNOTES

1 Until 1975, persons who were 17 through 34 years of age and full-time students in high school or college were considered ineligible by NCES for participation in adult education.

2 This finding is supported by the results of a recent survey conducted by the American Management Society Committee of 500. Of 385 managers responding, 340 (88%) reported that their companies provided financial assistance to enable employees to pursue formal courses of study.

3 Figures are negotiated tuition-aid plans in collective bargaining agreements for 1,000 or more workers.

4 The data source for the section is the NCES Tri-Annual Surveys of Participation in Adult Education. Despite problems with changing definitions and specificity of education and training programs described, this is the best data available on adult participation in organized instruction.

5 Hispanics were not broken out in 1969 or 1975 so trend comparisons are not possible for this group.

6 Because of changes in definitions between survey administrations it is very difficult to adequately assess how much of the change is actually due to this full-time/part-time variation.

7 This description is adapted from Arthur Shy's description in *Displaced Workers: Implications for Education and Training Institutes*.

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